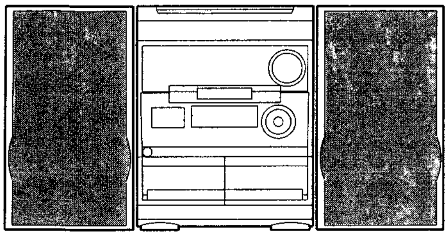
aiwa

AIWA -02623

aiwa
SERVICE

CX-NH3MD
SX-NH3



MD/CD STEREO
SYSTEM

- BASIC TAPE MECHANISM: 6ZM-3YPR1N
- BASIC CD MECHANISM:4ZG-1Z1MD
- BASIC MD MECHANISM: 7ZG-6U

•TYPE.U

SERVICE MANUAL

- If requiring information about the CD mechanism, see Service Manual of 4ZG-1Z (S/M Code No. 09-973-187-50T). V/3295 # 2040013

2623

S/M Code No. 09-978-209-70I

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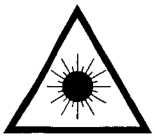
PROTECTION OF EYES FROM LASER BEAM DURING SERVICING

This set employs laser. Therefore, be sure to follow carefully the instructions below when servicing.

WARNING!

WHEN SERVICING, DO NOT APPROACH THE LASER EXIT WITH THE EYE TOO CLOSELY. IN CASE IT IS NECESSARY TO CONFIRM LASER BEAM EMISSION. BE SURE TO OBSERVE FROM A DISTANCE OF MORE THAN 30cm FROM THE SURFACE OF THE OBJECTIVE LENS ON THE OPTICAL PICK-UP BLOCK.



- Caution: Invisible laser radiation when open and interlocks defeated avoid exposure to beam.
- Advarsel: Usynling laserståling ved åbning, når sikkerhedsafbrydere er ude af funktion. Undgå udsættelse for stråling.

VAROITUS!

Laiteen Käyttäminen muulla kuin tässä käyttöohjeessa mainitulla tavalla saattaa altistaa käyt-täjän turvallisuusluokan 1 ylittävälle näkymättömäile lasersäteilylle.

VARNING!

Om apparaten används på annat sätt än vad som specificeras i denna bruksanvising, kan användaren utsättas för osynling laserstrålning, som överskrider gränsen för laserklass 1.

CAUTION

Use of controls or adjustments or performance of procedures other than those specified herein may result in hazardous radiation exposure.

ATTENTION

L'utilisation de commandes, réglages ou procédures autres que ceux spécifiés peut entraîner une dangereuse exposition aux radiations.

ADVARSEL!

Usynlig laserståling ved åbning, når sikkerhedsafbrydereer ude af funktion. Undgå udsættelse for stråling.

This Compact Disc player is classified as a CLASS 1 LASER product.

The CLASS 1 LASER PRODUCT label is located on the rear exterior.

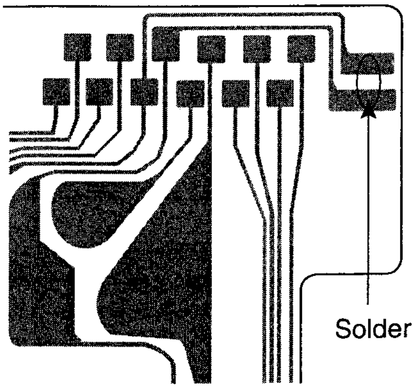
CLASS 1	LASER PRODUCT
KLASSE 1	LASER PRODUKT
LUOKAN 1	LASER LAITE
KLASS 1	LASER APPARAT

Precaution to replace Optical block

Body or clothes electrostatic potential could ruin laser diode in the optical block. Be sure ground body and workbench, and use care the clothes do not touch the diode.

1) After the connection, remove solder shown in the right figure.

CD PICK-UP ASSY P.C.B.

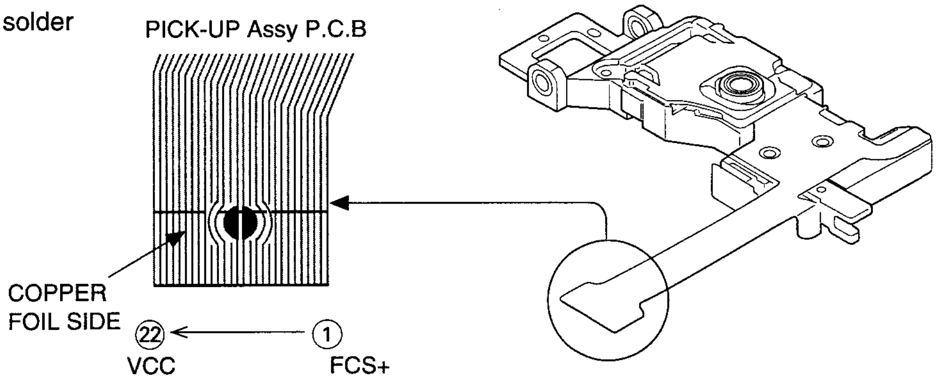


Precaution to replace Optical block (KMS-194C)

Body or clothes electrostatic potential could ruin laser diode in the optical block. Be sure ground body and workbench, and use care the clothes do not touch the diode.

1) After the connection, remove solder shown in the right figure.

PICK-UP Assy P.C.B



SPECIFICATIONS

Main unit CX-NH3MD

FM tuner section

Tuning range	87.5 MHz to 108 MHz
Usable sensitivity (IHF)	13.2 dBf
Antenna terminals	75 ohms (unbalanced)

AM tuner section

Tuning range	530 kHz to 1710 kHz (10 kHz step) 531 kHz to 1602 kHz (9 kHz step)
Usable sensitivity	350 µV/m
Antenna	Loop antenna

Amplifier section

Power output	50 W + 50 W (50 Hz – 20 kHz, THD less than 1%, 6 ohms)
Total harmonic distortion	0.05 % (15 W, 1 kHz, 6 ohms, DIN AUDIO)
Inputs	VIDEO/AUX: 150 mV (adjustable) MIC: 1.7 mV (10 kohms)
Outputs	SUPER WOOFER: 1.7 V SPEAKERS: accept speakers of 6 ohms or more SURROUND SPEAKERS: accept speakers of 16 ohms or more PHONES (stereo jack): accepts headphones of 32 ohms or more

Cassette deck section

Track format	4 tracks, 2 channels stereo
Frequency response	50 Hz – 15000 Hz
Recording system	AC bias
Heads	Deck 1: Playback head × 1 Deck 2: Recording/playback head × 1, Erase head × 1

Compact disc player section

Laser	Semiconductor laser ($\lambda = 780$ nm)
D-A converter	1 bit dual
Signal-to-noise ratio	85 dB (1 kHz, 0 dB)
Harmonic distortion	0.05 % (1 kHz, 0 dB)
Wow and flutter	Unmeasurable

General

Power requirements	120 V AC, 60 Hz
Power consumption	98 W
Dimensions of main unit (W × H × D)	260 × 309 × 346 mm ($10\frac{1}{4}$ × $12\frac{1}{4}$ × $13\frac{5}{8}$ in.)
Weight of main unit	7.5 kg (16 lbs. 9 oz.)

MD recorder section

Scanning method	Non-contact optical scanner (Semiconductor laser application)
Recording system	Magnetic polarity modulation overwrite system
Rotation speed	Aprox. 400 - 900 rpm (CLV)
Sampling frequency	44.1 kHz
No. of channels	Stereo: 2 channels Monaural: 1 channel
A-D, D-A converter	1-bit
Frequency	20 – 20000 Hz +0.5 – -1.5 dB
Wow and flutter	Unmeasurable

Speaker system SX-NH3

Cabinet type	3 way, bass reflex (magnetic shielded type)
Speakers	Woofer: 140 mm ($5\frac{5}{8}$ in.) cone type Tweeter: 60 mm (2 in.) cone type Super tweeter: 20 mm ($\frac{13}{16}$ in.) ceramic type
Impedance	6 ohms
Output sound pressure level	87 dB/W/m
Dimensions (W × H × D)	235 × 335 × 250 mm ($9\frac{3}{8}$ × $13\frac{1}{4}$ × $9\frac{7}{8}$ in.)
Weight	3.6 kg (7 lbs 15 oz.)

- Design and specifications are subject to change without notice.

ELECTRICAL MAIN PARTS LIST

DESCRIPTIONで判断できない物は "REFERENCE NAME LIST" を参照してください。
If can't understand for Description please kindly refer to "REFERENCE NAME LIST".

REF. NO	PART NO.	KANRI NO.	DESCRIPTION
IC			
	87-A20-650-010		IC,RPM6938-V11
	87-NB7-601-210		IC,LC86655W-5F13
	87-017-915-080		IC,BU4094BCF
	87-A20-501-040		C-IC,BA7762FS
	87-A20-083-010		IC,BA3835S
	87-A20-450-040		C-IC,BH3864 F
	87-A20-456-040		C-IC,BH3810 FS
	87-017-888-080		IC,NJM4558MD
	86-NFZ-655-010		IC,LC72131D(Z)
	87-A20-438-010		IC,LA1837
	87-001-982-010		IC,TA7291S
	87-017-022-080		IC,NJM2068M-D(T1)
	87-A20-014-010		C-IC,CXA1981Q/AR
	87-A20-397-010		C-IC,CXD2535CR-1
	87-A20-398-010		C-IC,CXD2536CR-1
	87-017-920-040		IC,HM51W4400BS/BLS78
	87-ZG6-601-110		IC,CXP81952-511R
	87-A20-496-040		C-IC,MPC17A38ZVMEL
	87-017-360-080		IC,SC7S04F
	87-001-881-080		IC,TC7SU04F
	87-002-465-080		IC,TC74HC368AF
	87-A20-640-040		C-IC,AK4520-VF
	87-017-945-040		IC,NJM2112
	87-001-792-080		IC,NJM2100M
	87-017-984-080		IC,TK11230
	84-HM1-622-040		IC,CXA8027N
TRANSISTOR			
	87-026-263-080		C-TR,RN1410
	89-213-702-010		TR,2SB1370E(1.8W)
	87-A30-076-080		C-TR,2SC3052F
	87-A30-075-080		C-TR,2SA1235F
	87-026-610-080		TR,KTC3198GR
	87-A30-073-080		C-TR,RT1N 141C
	87-A30-085-070		C-TR,CSA1362GR
	87-A30-083-080		TR,CSD1489B
	87-A30-084-080		TR,CSB1058B
	87-A30-071-080		C-TR,RT1N 144C
	87-026-609-080		TR,KTA1266GR
	87-A30-086-070		C-TR,CSD1306E
	87-A30-106-070		C-TR,CMBT5551
	87-A30-111-080		TR,C2N5401
	87-A30-137-010		TR,2SD2494
	87-A30-138-010		TR,2SB1625
	87-A30-162-010		FET,2SK2937
	87-A30-072-080		C-TR,RT1P 144C
	89-327-143-080		TR,2SC2714 (0.1W)
	87-A30-087-080		C-FET,2SK2158
	87-A30-074-080		C-TR,RT1P 141C
	89-341-165-080		CHIP TRANSISTOR 2SC4116GR
	89-109-521-080		TR,2SA952 (0.6W)
	89-320-011-080		TR,2SC2001 (15W)
	87-026-227-080		CHIP-TR,DTA114EK
	89-406-555-080		TR,2SD655 (0.5W)
	87-026-213-080		CHIP-TR,DTC114YK
	87-026-210-080		CHIP-TR,DTC144EK
	87-026-423-080		C-TR RN2305
	89-115-884-080		C-TR 2SA1588Y
	89-112-134-080		TR,2SA1213Y (1W)
	87-A30-056-080		C-FET,2SJ278
	87-A30-057-080		C-FET,2SK1764
DIODE			
	87-A40-116-060		DIODE,RS403L-B-D-51
	87-A40-115-060		DIODE,RS603M
	87-017-437-080		DIODE,1N4148M
	87-070-345-080		DIODE,IN4148
	87-A40-269-080		C-DIODE,MC2836
	87-A40-270-080		C-DIODE,MC2838
	87-070-274-080		DIODE,1N4003 SEM
	87-017-932-080		ZENER,MTZJ6.2B
	87-A40-341-080		ZENER,MTZJ 36 A
	87-A40-345-080		ZENER,MTZJ10C
	87-A40-004-080		ZENER,MTZJ16A
	87-A40-184-090		DIODE,RK34
	87-070-136-080		ZENER,MTZJ5.1B
	87-A40-003-080		ZENER,MTZJ4.3A
	87-A40-313-080		C-DIODE,MC 2840
	87-A40-234-080		ZENER,MTZJ5.6A
	87-017-850-080		C-DIODE,DAP222
	87-017-978-080		DIODE,1N4003
	87-A40-244-080		ZENER,MTZJ T-72 7.5B
	87-017-164-080		ZENER,HZS9A2L
	87-017-083-080		ZENER,HZS4C2
	87-017-077-080		ZENER,HZS4A1
	87-017-925-070		C-VARI CAP,KV1460
	87-A40-124-080		C-DIODE,RB501V-40
	87-020-575-080		C-ZENER,02CZ2.4Z
	87-017-948-080		C-DIODE,U1FWJ44N
	87-002-419-080		C-DIODE,U1BC44
MAIN C.B			
C101	87-010-917-090		CAP,E 3300-50 M SMG
C102	87-010-917-090		CAP,E 3300-50 M SMG
C103	87-016-658-090		CAP,E 4700-35 SMG
C104	87-016-658-090		CAP,E 4700-35 SMG
C105	87-012-368-080		C-CAP,S 0.1-50 F
C106	87-012-368-080		C-CAP,S 0.1-50 F
C107	87-012-368-080		C-CAP,S 0.1-50 F
C108	87-012-368-080		C-CAP,S 0.1-50 F
C109	87-010-196-080		C-CAP,0.1-25
C110	87-010-196-080		C-CAP,0.1-25
C111	87-010-196-080		C-CAP,0.1-25
C112	87-010-196-080		C-CAP,0.1-25
C113	87-010-408-080		CAP,E 47-50V
C116	87-010-408-080		CAP,E 47-50V
C117	87-010-430-080		CAP,E 100-63
C118	87-010-263-080		CAP,E 100-10V
C119	87-010-260-080		CAP,E 47-25V
C120	87-010-403-080		CAP,E 3.3-50V
C121	87-012-140-080		CAP,470P
C122	87-010-263-080		CAP,E 100-10V
C123	87-010-247-080		CAP,E 100-50V
C124	87-010-112-080		CAP,E 100-16V
C125	87-010-235-080		CAP,E 470-16 SME
C129	87-010-393-080		CAP,E 100-35V
C201	87-010-400-080		CAP,E 0.47-50V
C202	87-010-400-080		CAP,E 0.47-50V
C205	87-010-183-080		C-CAP,S 2700P-50 B
C206	87-010-183-080		C-CAP,S 2700P-50 B
C207	87-010-404-080		CAP,E 4.7-50V
C208	87-010-404-080		CAP,E 4.7-50V
C209	87-010-404-080		CAP,E 4.7-50V
C210	87-010-404-080		CAP,E 4.7-50V
C211	87-010-186-080		C-CAP,4700P
C212	87-010-186-080		C-CAP,4700P
C213	87-010-260-080		CAP,E 47-25V
C214	87-010-260-080		CAP,E 47-25V
C215	87-012-368-080		C-CAP,S 0.1-50 F
C219	87-012-368-080		C-CAP,S 0.1-50 F
C220	87-012-368-080		C-CAP,S 0.1-50 F
C221	87-012-368-080		C-CAP,S 0.1-50 F
C222	87-012-368-080		C-CAP,S 0.1-50 F
C223	87-010-194-080		C-CAP,0.047
C225	87-A10-516-080		C-CAP,S 100P-200 J CH

REF. NO	PART NO.	KANRI NO.	DESCRIPTION
C226	87-A10-516-080		C-CAP,S 100P-200 J CH
C229	87-016-461-080		C-CAP,S 0.47-16F
C230	87-016-461-080		C-CAP,S 0.47-16F
C242	87-010-406-040		CAP,E 22-50 SME
C243	87-010-197-080		C-CAP,0.01 DM
C244	87-010-406-080		CAP,E 22-50
C301	87-010-318-080		C-CAP,S 47P-50 CH
C302	87-010-318-080		C-CAP,S 47P-50 CH
C303	87-012-145-080		C-CAP,S 270P CH
C304	87-012-145-080		C-CAP,S 270P CH
C305	87-012-145-080		C-CAP,S 270P CH
C306	87-012-145-080		C-CAP,S 270P CH
C307	87-010-196-080		C-CAP,0.1-25
C309	87-010-196-080		C-CAP,0.1-25
C310	87-010-196-080		C-CAP,0.1-25
C311	87-010-198-080		C-CAP,0.022
C312	87-010-198-080		C-CAP,0.022
C313	87-010-182-080		C-CAP,S 2200P-50 B
C314	87-010-182-080		C-CAP,S 2200P-50 B
C315	87-010-182-080		C-CAP,S 2200P-50 B
C316	87-010-182-080		C-CAP,S 2200P-50 B
C321	87-016-492-080		C-CAP,S 0.33-16 FZ
C322	87-016-492-080		C-CAP,S 0.33-16 FZ
C324	87-010-260-080		CAP,E 47-25V
C325	87-010-370-080		CAP,E 330-6.3 SME
C327	87-010-404-080		CAP,E 4.7-50V
C328	87-010-404-080		CAP,E 4.7-50V
C332	87-010-196-080		C-CAP,0.1-25
C335	87-010-401-080		CAP,E 1-50V
C336	87-010-401-080		CAP,E 1-50V
C337	87-010-196-080		C-CAP,0.1-25
C339	87-010-196-080		C-CAP,,0.1-25
C340	87-010-196-080		C-CAP,0.1-25
C351	87-012-140-080		CAP,470P
C352	87-012-140-080		CAP,470P
C354	87-010-854-080		C-CAP,S 560PCH
C355	87-010-178-080		C-CAP,1000P
C356	87-010-260-080		CAP,E 47-25V
C357	87-010-197-080		C-CAP,0.01 DM
C358	87-010-183-080		C-CAP,S 2700P-50 B
C359	87-010-183-080		C-CAP,S 2700P-50 B
C360	87-010-183-080		C-CAP,S 2700P-50 B
C370	87-010-196-080		C-CAP,0.1-25
C373	87-010-993-080		C-CAP,S 0.056-25 B
C374	87-010-993-080		C-CAP,S 0.056-25 B
C378	87-010-196-080		C-CAP,0.1-25
C379	87-010-382-080		CAP,E 22-25V
C380	87-010-382-080		CAP,E 22-25V
C386	87-010-196-080		C-CAP,0.1-25
C388	87-010-154-080		C-CAP,10P
C401	87-010-186-080		C-CAP,4700P
C402	87-010-186-080		C-CAP,4700P
C421	87-010-402-080		CAP,E 2.2-50V
C422	87-010-402-080		CAP,E 2.2-50V
C516	87-010-196-080		C-CAP,0.1-25
C605	87-010-180-080		C-CER,1500P
C606	87-010-180-080		C-CER,1500P
C611	87-016-081-080		C-CAP,S 0.1-16 RK
C613	87-010-404-080		C-CAP,4.7-50V
C614	87-010-404-080		C-CAP,4.7-50V
C615	87-010-183-080		C-CAP,S 2700P-50 B
C619	87-010-263-080		CAP,E 100-10V
C620	87-010-196-080		C-CAP,0.1-25
C621	87-010-263-080		CAP,E 100-10V
C622	87-010-196-080		C-CAP,0.1-25
C623	87-010-194-080		CAP, CHIP 0.047
C629	87-010-196-080		C-CAP,0.1-25
C646	87-010-322-080		C-CAP,S 100P-50 CH
C647	87-010-322-080		C-CAP,S 100P-50 CH
C680	87-018-209-080		CAP,TC U 0.1-50 ZF

REF. NO	PART NO.	KANRI NO.	DESCRIPTION
C701	87-010-381-080		CAP,E 330-16V
C702	87-010-404-080		CAP,E 4.7-50V
C703	87-010-197-080		C-CAP,0.01 DM
C704	87-010-197-080		C-CAP,0.01 DM
C711	87-010-263-080		CAP,E 100-10V
C712	87-010-196-080		C-CAP,0.1-25
C713	87-010-197-080		C-CAP,0.01 DM
C714	87-010-197-080		C-CAP,0.01 DM
C721	87-010-312-080		C-CAP,S 15P-50 CH
C722	87-010-312-080		C-CAP,S 15P-50 CH
C723	87-010-178-080		C-CAP,1000P
C725	87-010-178-080		C-CAP,1000P
C727	87-010-196-080		C-CAP,0.1-25
C728	87-010-248-080		CAP,E 220-10V
C755	87-010-197-080		C-CAP,0.01 DM
C756	87-010-197-080		C-CAP,0.01 DM
C757	87-010-318-080		C-CAP,S 47P-50 CH
C758	87-010-149-080		C-CAP,S 5P-50 CH
C761	87-010-196-080		C-CAP,0.1-25
C762	87-010-197-080		C-CAP,0.01 DM
C763	87-010-194-080		C-CAP,0.047
C765	87-010-197-080		C-CAP,0.01 DM
C766	87-010-197-080		C-CAP,0.01 DM
C767	87-010-405-080		CAP,E 10-50V
C768	87-010-197-080		C-CAP,0.01 DM
C769	87-010-408-080		CAP,E 47-50V
C770	87-015-821-080		C-CAP 0.047
C771	87-010-407-080		CAP,E 33-50V
C772	87-010-194-080		C-CAP,0.047
C773	87-010-196-080		C-CAP,0.1-25
C774	87-010-263-080		CAP,E100-10V
C775	87-010-404-080		CAP,E 4.7-50V
C776	87-010-197-080		C-CAP,0.01 DM
C777	87-010-400-080		CAP,E 0.47-50V
C778	87-010-401-080		CAP,E 1-50V
C779	87-010-401-080		CAP,E 1-50V
C780	87-010-196-080		C-CAP,0.1-25
C781	87-010-405-080		CAP,E 10-50V
C782	87-010-405-080		CAP,E 10-50V
C783	87-015-819-080		CAP,0.01
C784	87-010-197-080		C-CAP,0.01 DM
C785	87-010-400-080		CAP,E 0.47-50V
C786	87-010-400-080		CAP,E 0.47-50V
C787	87-010-184-080		C-CAP,3300P(K)
C788	87-010-184-080		C-CAP,3300P(K)
C789	87-010-179-080		C-CAP,S B1200P
C790	87-010-179-080		C-CAP,S B1200P
C791	87-010-405-080		CAP,E 10-50V
C793	87-010-178-080		C-CAP,1000P
C794	87-010-406-080		C-CAP,22-50
C795	87-010-596-080		CAP,S 0.047-16
C796	87-010-403-080		CAP,E 3.3-50V
C797	87-010-182-080		C-CAP,S 2200P-50 B
C798	87-010-182-080		C-CAP,S 2200P-50 B
C799	87-010-194-080		C-CAP,0.047
C800	87-018-134-080		CAP,TC U 0.01-16 NY
C812	87-010-197-080		C-CAP,0.01 DM
C813	87-010-197-080		C-CAP,0.01 DM
C814	87-010-197-080		C-CAP,0.01 DM
C815	87-010-197-080		C-CAP,0.01 DM
C816	87-010-197-080		C-CAP,0.01 DM
C819	87-010-197-080		C-CAP,0.01 DM
C820	87-010-408-080		CAP,E 47-50V
C821	87-010-197-080		C-CAP,0.01 DM
C822	87-010-197-080		C-CAP,0.01 DM
C823	87-010-197-080		C-CAP,0.01 DM
C828	87-010-196-080		C-CAP,0.1-25
C829	87-010-196-080		C-CAP,0.1-25
C959	87-010-196-080		C-CAP,0.1-25
C960	87-010-196-080		C-CAP,0.1-25

REF. NO	PART NO.	KANRI NO.	DESCRIPTION
C961	87-010-152-080		C-CAP,S 8P-50 CH
CF801	87-008-261-010		FILTER, SFE10.7MA5-A
CF802	87-008-261-010		FILTER, SFE10.7MA5-A
FB617	87-008-372-080		FILTER, EMI BL OIRNI
FC602	88-906-271-110		FF-CABLE,6P 1.25
FC603	88-906-151-110		FF-CABLE,6P 1.25
FFE801	A8-6ZA-194-030		6ZA-1 YFEUNM
J252	87-A60-024-010		JACK 6.3BLK W/S WKM
J253	87-099-474-010		JACK,PIN 3P BLK
J254	87-A60-238-010		TERMINAL,SP 4P (MSC)
J601	87-A60-425-010		JACK,PIN 2P YKC21-3838
J801	87-A60-202-010		TERMINAL,ANT 4P MSP-154V-02
L201	87-003-383-010		COIL,1UH-S
L202	87-003-383-010		COIL,1UH-S
L301	87-A50-049-010		COIL,TRAP 85K(COI)
L302	87-A50-049-010		COIL,TRAP 85K(COI)
L351	87-007-342-010		COIL,OSC 85K BIAS
L601	87-003-231-080		COIL,1UH
L616	87-003-105-080		COIL,0.22UH
L770	87-005-849-080		COIL,10UH(CECS)
L771	87-A50-165-010		COIL,FM DET-N(TOK)
L772	87-A90-245-010		FLTR,CFAZH-450 (TOK)
L832	87-005-847-080		COIL,2.2UH(CECS)
L981	87-NF4-650-010		COIL,AM PACK 4N(TOK)
⚠PR201	87-A90-210-080		FUSE,7A 125V 251
⚠PR202	87-A90-210-080		FUSE,7A 125V 251
R123	87-022-200-080		RESISTOR, METAL 0.56 1W
R229	87-A00-257-080		RES,M/F 0.15-1W J
R230	87-A00-257-080		RES,M/F 0.15-1W J
RY101	87-045-389-010		RELAY,12V OSA-SS-212DM5
SFR301	87-024-438-080		SFR,220K RH063EC
SFR302	87-024-438-080		SFR,220K RH063EC
SFR303	87-024-438-080		SFR,220K RH063EC
SFR304	87-024-438-080		SFR,220K RH063EC
SFR351	87-024-436-080		SFR,47K RH063EC
SFR352	87-024-436-080		SFR,47K RH063EC
X721	87-A70-061-010		VIB,XTAL 4.500MHZ CSA-309

FRONT C.B

REF. NO	PART NO.	KANRI NO.	DESCRIPTION
C101	87-010-198-080		CAP, CHIP 0.022
C102	87-010-198-080		CAP, CHIP 0.022
C103	87-010-197-080		CAP, CHIP 0.01 DM
C104	87-010-198-080		CAP, CHIP 0.022
C105	87-010-198-080		CAP, CHIP 0.022
C107	87-012-157-080		C-CAP,S 330P-50 CH
C108	87-010-405-040		CAP,E 10-50
C112	87-010-196-080		CHIP CAPACITOR,0.1-25
C113	87-A10-189-040		CAP,E 220-10
C114	87-010-196-080		CHIP CAPACITOR,0.1-25
C115	87-010-178-080		CHIP CAP 1000P
C116	87-010-494-040		CAP,E 1-50 GAS
C117	87-010-555-040		CAP,E 100-10 GAS
C118	87-010-194-080		CAP, CHIP 0.047
C119	87-010-408-040		CAP,E 47-50 SME
C120	87-010-406-040		CAP,E 22-50 SME
C121	87-010-406-040		CAP,E 22-50 SME
C122	87-018-208-080		CAP,0.047-50 F
C125	87-010-196-080		CHIP CAPACITOR,0.1-25
C126	87-010-312-080		C-CAP,S 15P-50 CH
C127	87-010-196-080		CHIP CAPACITOR,0.1-25
C130	87-010-320-080		CHIP CAP 68P
C131	87-010-316-080		C-CAP,S 33P-50 CH
C132	87-010-178-080		CHIP CAP 1000P
C226	87-010-196-080		CHIP CAPACITOR,0.1-25
C351	87-012-158-080		C-CAP,S 390P-50 CH
C352	87-010-196-080		CHIP CAPACITOR,0.1-25
C353	87-010-196-080		CHIP CAPACITOR,0.1-25
C354	87-010-196-080		CHIP CAPACITOR,0.1-25
C355	87-010-196-080		CHIP CAPACITOR,0.1-25
C356	87-010-196-080		CHIP CAPACITOR,0.1-25
C357	87-010-196-080		CHIP CAPACITOR,0.1-25
C403	87-010-992-080		C-CAP,S 0.047-25 B
C404	87-010-992-080		C-CAP,S 0.047-25 B
C405	87-010-401-040		CAP,E 1-50 SME
C406	87-010-401-040		CAP,E 1-50 SME
C407	87-010-184-080		CHIP CAPACITOR 3300P(K)
C408	87-010-184-080		CHIP CAPACITOR 3300P(K)
C409	87-010-592-080		CAPACITOR,CHIP S0.022
C410	87-010-592-080		CAPACITOR,CHIP S0.022
C411	87-A10-201-080		C-CAP,S0.33-16 KB
C412	87-A10-201-080		C-CAP,S0.33-16 KB
C413	87-010-196-080		CHIP CAPACITOR,0.1-25
C414	87-010-374-040		CAP,E 47-10
C415	87-010-374-040		CAP,E 47-10
C416	87-010-196-080		CHIP CAPACITOR,0.1-25
C417	87-016-081-080		C-CAP,S 0.1-16 RK
C418	87-010-405-040		CAP,E 10-50
C601	87-010-405-040		CAP,E 10-50
C602	87-010-185-080		CAP,CHIP 3900P
C603	87-010-405-040		CAP,E 10-50
C604	87-010-406-040		CAP,E 22-50 SME
C605	87-010-196-080		CHIP CAPACITOR,0.1-25
C606	87-010-322-080		C-CAP,S 100P-50 CH
C607	87-010-321-080		CHIP CAPACITOR,82P(J)
C608	87-010-196-080		CHIP CAPACITOR,0.1-25
C609	87-010-545-040		CAP,E 0.22-50 SME
C610	87-010-322-080		C-CAP,S 100P-50 CH
C611	87-010-177-080		C-CAP,S 820P-50 SL
C612	87-010-176-080		C-CAP,S 680P-50 SL
C614	87-010-248-040		CAP,E 220-10 SME
C630	87-010-196-080		CHIP CAPACITOR,0.1-25
C631	87-018-131-080		CAP,TC U 1000P-50
C720	87-010-196-080		CHIP CAPACITOR,0.1-25
C721	87-010-154-080		CAP CHIP 10P
C725	87-010-196-080		CHIP CAPACITOR,0.1-25
C726	87-010-196-080		CHIP CAPACITOR,0.1-25
FB601	87-008-372-080		FILTER, EMI BL OIRNI
FB602	87-008-372-080		FILTER, EMI BL OIRNI
FC1	88-911-261-110		FF-CABLE,11P 1.25
FC6	85-NF5-618-010		CABLE,FFC 13P 1.25
FC502	89-906-271-110		FF-CABLE,6P 1.25
FL101	87-NB7-603-010		FL,13-LT-22GK
J601	87-A60-284-010		JACK,3.5MO (MSC)
⚠PR115	87-A90-172-080		FUSE,1A 125V 251
S302	87-A90-095-080		SW,TACT EVQ11G04M
S304	87-A90-095-080		SW,TACT EVQ11G04M
S305	87-A90-095-080		SW,TACT EVQ11G04M
S306	87-A90-095-080		SW,TACT EVQ11G04M
S307	87-A90-095-080		SW,TACT EVQ11G04M
S308	87-A90-095-080		SW,TACT EVQ11G04M
S309	87-A90-095-080		SW,TACT EVQ11G04M
S310	87-A90-095-080		SW,TACT EVQ11G04M
S311	87-A90-095-080		SW,TACT EVQ11G04M
S312	87-A90-095-080		SW,TACT EVQ11G04M
S313	87-A90-095-080		SW,TACT EVQ11G04M
S314	87-A90-095-080		SW,TACT EVQ11G04M
S315	87-A90-095-080		SW,TACT EVQ11G04M
S316	87-A90-095-080		SW,TACT EVQ11G04M
S317	87-A90-095-080		SW,TACT EVQ11G04M
S318	87-A90-095-080		SW,TACT EVQ11G04M
S319	87-A90-095-080		SW,TACT EVQ11G04M
S320	87-A90-095-080		SW,TACT EVQ11G04M
S323	87-A90-095-080		SW,TACT EVQ11G04M
S324	87-A90-095-080		SW,TACT EVQ11G04M
S325	87-A90-095-080		SW,TACT EVQ11G04M
S328	87-A90-095-080		SW,TACT EVQ11G04M
S329	87-A90-095-080		SW,TACT EVQ11G04M
S336	87-A90-095-080		SW,TACT EVQ11G04M
S372	87-A90-095-080		SW,TACT EVQ11G04M

REF. NO	PART NO.	KANRI NO.	DESCRIPTION
S373	87-A90-095-080		SW,TACT EVQ11G04M
S374	87-A90-095-080		SW,TACT EVQ11G04M
S375	87-A90-095-080		SW,TACT EVQ11G04M
S376	87-A90-095-080		SW,TACT EVQ11G04M
S377	87-A90-095-080		SW,TACT EVQ11G04M
S378	87-A90-095-080		SW,TACT EVQ11G04M
SW101	87-A90-535-010		SW,RTRY EC16B24304
VR601	87-NB7-602-010		VR,RTRY 10KAX1 1 V
X202	87-A70-070-080		VIB,CER 5.76MHZ CRHF

LED C.B

REF. NO	PART NO.	KANRI NO.	DESCRIPTION
LED292	87-017-730-080		LED,SEL6214S
LED293	87-070-081-080		LED,SEL 6514C TP-5
LED294	87-017-730-080		LED,SEL6214S

JOG C.B

REF. NO	PART NO.	KANRI NO.	DESCRIPTION
SW102	87-A90-085-010		SW,RTRY EC16B 24204

CAS.DECK C.B

REF. NO	PART NO.	KANRI NO.	DESCRIPTION
CON1	87-099-753-019		CONN,11PH9604
SFR1	87-024-581-010		SFR,3.3K DIA 6H
SOL1	82-ZM1-618-310		SOL ASSY,27
SOL2	82-ZM1-618-310		SOL ASSY,27
SW1	87-A90-248-010		SW,MICRO ESE11SH
SW2	87-A90-248-010		SW,MICRO ESE11SH
SW3	87-A90-248-010		SW,MICRO ESE11SH
SW4	87-036-378-010		SW,PUSH 1-1-1 SH2
SW5	87-036-378-010		SW,PUSH 1-1-1 SH2

MD MAIN C.B

REF. NO	PART NO.	KANRI NO.	DESCRIPTION
C101	87-016-462-080		C-CAP,S 1-16 F
C102	87-016-462-080		C-CAP,S 1-16 F
C701	87-016-462-080		C-CAP,S 1-16 F
C702	87-012-286-080		CAP, U 0.01-25
C703	87-012-274-080		CHIP CAP,U 1000P-50B
C704	87-010-787-080		CAP, U 0.022-25
C705	87-010-662-080		C-CAP,E 22-6.3
C706	87-010-662-080		C-CAP,E 22-6.3
C707	87-A10-025-080		C-CAP,U 0.22-16Z F
C708	87-016-460-080		C-CAP,S 0.22-16 B
C709	87-010-829-080		CAP, U 0.047-16
C710	87-016-462-080		C-CAP,S 1-16 F
C711	87-A10-025-080		C-CAP,U 0.22-16Z F
C712	87-016-462-080		C-CAP,S 1-16 F
C713	87-012-284-080		CAP, U 6800P-50
C714	87-012-276-080		CAP, CHIP SS 1500 PBK
C715	87-010-829-080		CAP, U 0.047-16
C716	87-010-662-080		C-CAP,E 22-6.3
C717	87-012-286-080		CAP, U 0.01-25
C718	87-012-195-080		C-CAP,U 100P-50CH
C719	87-012-286-080		CAP, U 0.01-25
C720	87-A10-057-080		C-CAP,TN 100-4 F95 E
C721	87-010-662-080		C-CAP,E 22-6.3
C722	87-010-787-080		CAP, U 0.022-25
C723	87-010-829-080		CAP, U 0.047-16
C724	87-010-662-080		C-CAP,E 22-6.3
C725	87-010-662-080		C-CAP,E 22-6.3
C726	87-010-831-080		C-CAP,U,0.1-16F
C727	87-016-462-080		C-CAP,S 1-16 F
C728	87-012-276-080		CAP, CHIP SS 1500 PBK
C730	87-012-196-080		C-CAP,U 120P-50 CH
C731	87-010-787-080		CAP, U 0.022-25
C732	87-016-462-080		C-CAP,S 1-16 F
C733	87-012-286-080		CAP, U 0.01-25
C734	87-010-831-080		C-CAP,U,0.1-16F
C735	87-012-195-080		C-CAP,U 100P-50CH

REF. NO	PART NO.	KANRI NO.	DESCRIPTION
C736	87-012-279-080		C-CAP,U 2700P-50 B
C737	87-016-462-080		C-CAP,S 1-16 F
C738	87-010-831-080		C-CAP,U,0.1-16F
C739	87-012-166-080		C-CAP,U 4P-50 CH
C740	87-012-166-080		C-CAP,U 4P-50 CH
C741	87-010-831-080		C-CAP,U,0.1-16F
C742	87-010-831-080		C-CAP,U,0.1-16F
C743	87-010-662-080		C-CAP,E 22-6.3
C744	87-A10-057-080		C-CAP,TN 100-4 F95 E
C746	87-010-831-080		C-CAP,U,0.1-16F
C747	87-016-462-080		C-CAP,S 1-16 F
C748	87-010-831-080		C-CAP,U,0.1-16F
C749	87-010-252-010		CAP,E 1000-6.3V
C750	87-010-464-080		CAP,E 220-4
C751	87-010-252-010		CAP,E 1000-6.3V
C752	87-010-464-080		CAP,E 220-4
C753	87-010-779-080		C-CAP,E 100-6.3
C754	87-016-462-080		C-CAP,S 1-16 F
C755	87-010-831-080		C-CAP,U,0.1-16F
C756	87-A10-514-010		CAP,AS 22-10 OSFA
C757	87-010-875-080		C-CAP,CER 1000P-500K
C758	87-010-831-080		C-CAP,U,0.1-16F
C759	87-010-831-080		C-CAP,U,0.1-16F
C761	87-016-462-080		C-CAP,S 1-16 F
C762	87-016-462-080		C-CAP,S 1-16 F
C763	87-010-831-080		C-CAP,U,0.1-16F
C764	87-010-831-080		C-CAP,U,0.1-16F
C767	87-010-779-080		C-CAP,E 100-6.3
C768	87-010-662-080		C-CAP,E 22-6.3
C769	87-010-464-080		CAP,E 220-4
C771	87-018-148-080		CAP,TC U 12P-50J CH UP050
C772	87-018-134-080		CAP,TC U 0.01-16NY UP050
C773	87-018-147-080		CAP,TC U 10P-50J CH UP050
C774	87-018-134-080		CAP,TC U 0.01-16NY UP050
C775	87-018-109-080		CAP,TC U 22P-50J SL 050
C776	87-018-209-080		CAP,TC U 0.1-50Z F UP050
C788	87-010-831-080		C-CAP,U,0.1-16F
C789	87-010-831-080		C-CAP,U,0.1-16F
C792	87-010-831-080		C-CAP,U,0.1-16F
C793	87-010-831-080		C-CAP,U,0.1-16F
C794	87-010-831-080		C-CAP,U,0.1-16F
C795	87-012-274-080		CHIP CAP,U 1000P-50B
C796	87-012-286-080		CAP,U 0.01-25
C797	87-010-829-080		CAP,U 0.047-16
C801	87-010-662-080		C-CAP,E 22-6.3
C802	87-010-662-080		C-CAP,E 22-6.3
C803	87-012-337-080		C-CAP,U 56P-50 CH
C804	87-012-337-080		C-CAP,U 56P-50 CH
C805	87-012-180-080		C-CAP,U 22P-50 CH
C806	87-012-180-080		C-CAP,U 22P-50 CH
C807	87-012-273-080		C-CAP,U 820P-50 B
C808	87-012-273-080		C-CAP,U 820P-50 B
C809	87-016-561-080		C-CAP,E 10-6.3 MF
C810	87-016-561-080		C-CAP,E 10-6.3 MF
C811	87-016-561-080		C-CAP,E 10-6.3 MF
C812	87-016-561-080		C-CAP,E 10-6.3 MF
C813	87-012-267-080		C-CAP,U 270P-50 B
C814	87-012-267-080		C-CAP,U 270P-50 B
C815	87-012-267-080		C-CAP,U 270P-50 B
C816	87-012-267-080		C-CAP,U 270P-50 B
C817	87-010-831-080		C-CAP,U,0.1-16F
C818	87-010-661-080		C-CAP,E 10-16
C819	87-A10-057-080		C-CAP,TN 100-4 F95 E
C820	87-010-831-080		C-CAP,U,0.1-16F
C823	87-010-661-080		C-CAP,E 10-16
C824	87-010-831-080		C-CAP,U,0.1-16F
C825	87-010-831-080		C-CAP,U,0.1-16F
C826	87-016-446-080		C-CAP,TN 220-4 F95 G
C827	87-A10-259-080		C-CAP,E 4.7-16 MFA6
C828	87-010-661-080		C-CAP,E 10-16

REF. NO	PART NO.	KANRI NO.	DESCRIPTION
C829	87-010-831-080		C-CAP,U,0.1-16F
C830	87-010-661-080		C-CAP,E 10-16
C831	87-010-831-080		C-CAP,U,0.1-16F
C832	87-010-831-080		C-CAP,U,0.1-16F
C833	87-010-831-080		C-CAP,U,0.1-16F
C834	87-010-657-080		C-CAP,E 1-50
C835	87-010-662-080		C-CAP,E 22-6.3
C836	87-012-286-080		CAP,U 0.01-25
C837	87-A10-368-080		C-CAP,S 2.2-10 Z F
C838	87-A10-368-080		C-CAP,S 2.2-10 Z F
FC101	87-ZG6-606-010		FF-CABLE,8P 1.0 100M
FC104	87-ZG6-605-010		FF-CABLE,14P 1.0 230
FC702	86-ZG2-617-010		FF-CABLE,11P 0.5 125
FC705	86-CD0-614-010		FF-CABLE,8P 1.25 30MM
L701	87-A50-010-080		C-COIL,22UH LQH3C
L702	87-A50-012-080		C-COIL,100UH LQH3C
L703	87-A50-117-080		C-COIL,10UHLQH3C
L704	87-A50-117-080		C-COIL,10UHLQH3C
L705	87-A50-010-080		C-COIL,22UH LQH3C
L706	87-005-777-080		C-COIL,1UK NL25
L707	87-A50-013-080		C-COIL,560UH LQH3C
L708	87-A50-013-080		C-COIL,560UH LQH3C
L709	87-A50-012-080		C-COIL,100UH LQH3C
L710	84-HD1-618-080		C-COIL,33UH
L711	84-HD1-618-080		C-COIL,33UH
L712	87-005-778-080		C-COIL,10UK NLC25
L713	87-A50-108-080		C-COIL,330H K NLC
L715	87-A50-117-080		C-COIL,10UHLQH3C
L791	87-003-097-080		C-COIL,1UH M LAL02
L792	87-003-097-080		C-COIL,1UH M LAL02
L801	87-A50-116-080		C-COIL,4.7UHLQH3C
L802	87-A50-116-080		C-COIL,4.7UHLQH3C
R748	87-022-223-080		C-RES 2.2K 1/16W F
R749	87-022-239-080		C-RES,U 10K-1/16WF
R752	87-022-231-080		C-RES,U 4.7K-1/16W F
R753	87-022-239-080		C-RES,U 10K-1/16WF
R756	87-022-227-080		C-RES,U 3.3K-1/16W F
R757	87-022-239-080		C-RES,U 10K-1/16WF
R833	87-010-196-080		C-CAP,0.1-25
SFR701	87-024-411-080		C-SFR,47K RHO3A3A
SFR702	87-024-401-080		C-SFR,1K RH03A3A
SFR703	87-024-409-080		C-SFR,22K RHO3A3A
X701	87-A70-048-010		VIB,45.1584MHZ
X702	87-030-369-080		C-VIB,CER PBRC12.00B

MD MOTOR C.B

REF. NO	PART NO.	KANRI NO.	DESCRIPTION
C1	87-010-263-080		CAP,E 100-10V
C3	87-018-209-080		CAP,CER 0.1-50V
M1	87-045-305-010		MOTOR,RF-500TB DC-5V (2MA)
PH1	87-026-573-010		IC,GP1S53V

SW C.B

REF. NO	PART NO.	KANRI NO.	DESCRIPTION
SW1	87-A90-117-010		SW,PUSH 1-1-1 MPU103
SW2	87-A90-117-010		SW,PUSH 1-1-1 MPU103

DRV C.B

REF. NO	PART NO.	KANRI NO.	DESCRIPTION
C901	87-A10-019-080		C-CAP,TN 10-6.3 A
C902	87-010-787-080		CAP,U 0.022-25
C903	87-010-787-080		CAP,U 0.022-25
C904	87-010-829-080		CAP,U 0.047-16
C905	87-012-274-080		C-CAP,U 1000P-50B
C906	87-012-274-080		C-CAP,U 1000P-50B
C907	87-012-274-080		C-CAP,U 1000P-50B
C908	87-010-831-080		C-CAP,U 0.1-16F
C909	87-010-831-080		C-CAP,U 0.1-16F
C910	87-012-280-080		CAP,U 3300P-50
C911	87-016-462-080		C-CAP,S 1-16 F

REF. NO	PART NO.	KANRI NO.	DESCRIPTION
FC900	86-ZG2-618-010		FF-CABLE,4P 2 20MM
L901	87-A50-010-080		C-COIL,22UH LQH3C
SW901	87-036-269-080		SW,PUCH ESE102MH1
SW902	87-036-350-080		C-SW,PUSH SPPW9-4.8
SW903	87-036-366-080		C-SW,PUSH SPPW9-5.45

OWH C.B

MD POWER C.B

REF. NO	PART NO.	KANRI NO.	DESCRIPTION
C101	87-010-237-080		CAP,E 1000-16V
C102	87-010-237-080		CAP,E 1000-16V
C103	87-010-380-080		CAP,E 47-16V
C104	87-010-380-080		CAP,E 47-16V
C105	87-010-196-080		C-CAP,0.1-25
C106	87-010-196-080		C-CAP,0.1-25
C107	87-010-101-080		CAP,E 220-16
C108	87-010-101-080		CAP,E 220-16
C109	87-010-197-080		C-CAP,0.01 DM
C110	87-010-197-080		C-CAP,0.01 DM
C111	87-010-124-090		CAP,E 4700-16
C112	87-010-380-080		CAP,E 47-16V
C113	87-010-263-080		CAP,E 100-10V
C114	87-010-409-080		CAP,E 220-50 SME
C115	87-010-196-080		C-CAP,0.1-25
C116	87-010-252-080		CAP,E 1000-6.3V
C118	87-010-196-080		C-CAP,0.1-25
C121	87-010-403-080		C-CAP,3.3-50V
C130	87-010-263-080		CAP,E 100-10V
C131	87-010-197-080		C-CAP,0.01 DM
C203	87-010-911-080		CAP,E 10-50 ASF
C204	87-010-911-080		CAP,E 10-50 ASF
C205	87-012-154-080		C-CAP,S 150P-50 CH
C206	87-012-154-080		C-CAP,S 150P-50 CH
C207	87-010-180-080		C-CER 1500P
C208	87-010-180-080		C-CER 1500P
C209	87-010-911-080		CAP,E 10-50 ASF
C210	87-010-911-080		CAP,E 10-50 ASF
C213	87-010-936-080		CAP,E 4.7-50
C214	87-010-936-080		CAP,E 4.7-50
C215	87-010-405-080		CAP,E 10-50V
C216	87-010-405-080		CAP,E 10-50V
C217	87-010-197-080		C-CAP,0.01 DM
C218	87-010-197-080		C-CAP,0.01 DM
C219	87-010-407-080		CAP,E 33-50V
C220	87-010-407-080		CAP,E 33-50V
C302	87-012-140-080		CAP,470P
C401	87-010-263-080		CAP,E 100-10V
C402	87-010-196-080		C-CAP,0.1-25
C501	87-010-380-080		CAP,E 47-16V
L203	87-003-291-080		FLTR,EMI DSS306 102M
L204	87-003-291-080		FLTR,EMI DSS306 102M
L205	87-008-501-080		FLTR,DSS306-B101
L206	87-008-501-080		FLTR,DSS306-B101
LED401	87-A40-123-010		LED,SLZ-8128A-01-B

AC1 C.B

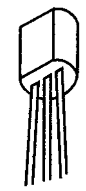
REF. NO	PART NO.	KANRI NO.	DESCRIPTION
⚠	87-050-053-010		AC CORD ASSY,U-2
⚠	87-A60-317-010		TERMINAL,1P MSC
⚠F101	87-035-416-010		FUSE,3A 250V T239
⚠FC1	87-033-213-080		CLAMP,FUSE PEC5000
⚠FC2	87-033-213-080		CLAMP,FUSE PEC5000
⚠PT101	87-NB7-607-010		PT,7NB7-U

AC2 C.B

REF. NO	PART NO.	KANRI NO.	DESCRIPTION
⚠PR1	87-026-690-080		FUSE,5A 125V 251
⚠PR2	87-026-690-080		FUSE,5A 125V 251
⚠PR3	87-A90-069-080		PROTECTOR 2A 251

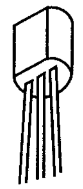
REF. NO	PART NO.	KANRI NO.	DESCRIPTION
⚠PR4	87-A90-069-080		PROTECTOR 2A 251
⚠PR5	87-A90-210-080		FUSE,7A 125V 251
⚠PR6	87-A90-210-080		FUSE,7A 125V 251
W1	85-NF5-628-010		F-CABLE 7P-2.5

TRANSISTOR ILLUSTRATION



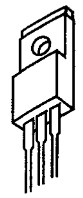
E C B

2SA952
2SC2001
2SD655
CSB1058
CSD1489
KTA1266
KTC3198



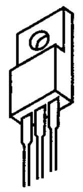
E B C

C2N5401



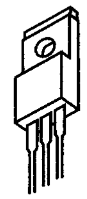
B C E

2SB1370
2SB1625
2SD2494



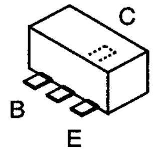
B C E

2SB1625
2SD2494

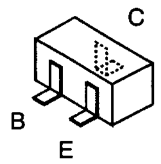


G D S

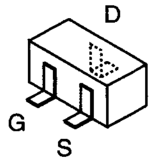
2SK2937



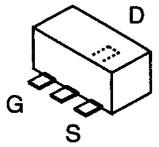
2SA1213



2SA1235
2SA1588
2SC2714
2SC3052
2SC4116
CMBT5551
CSA1362
CSD1306
DTA114EK
DTC114YK
DTC144EK
RN1410
RN2305
RTIN141C
RTIN144C
RTIP141C
RTIP144C

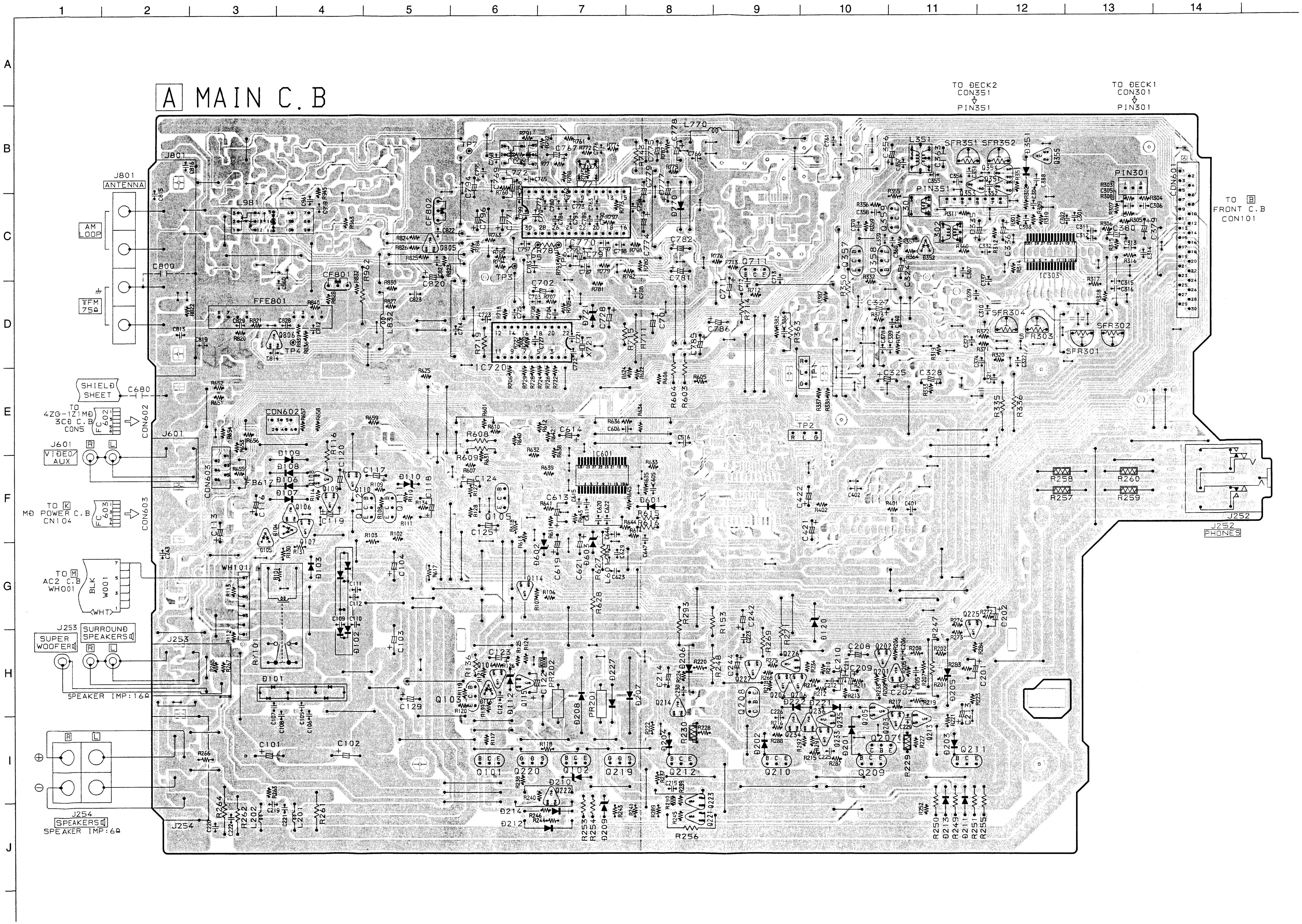


2SK2158



2SJ278
2SK1764

WIRING-1 (MAIN SECTION)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A
B
C
D
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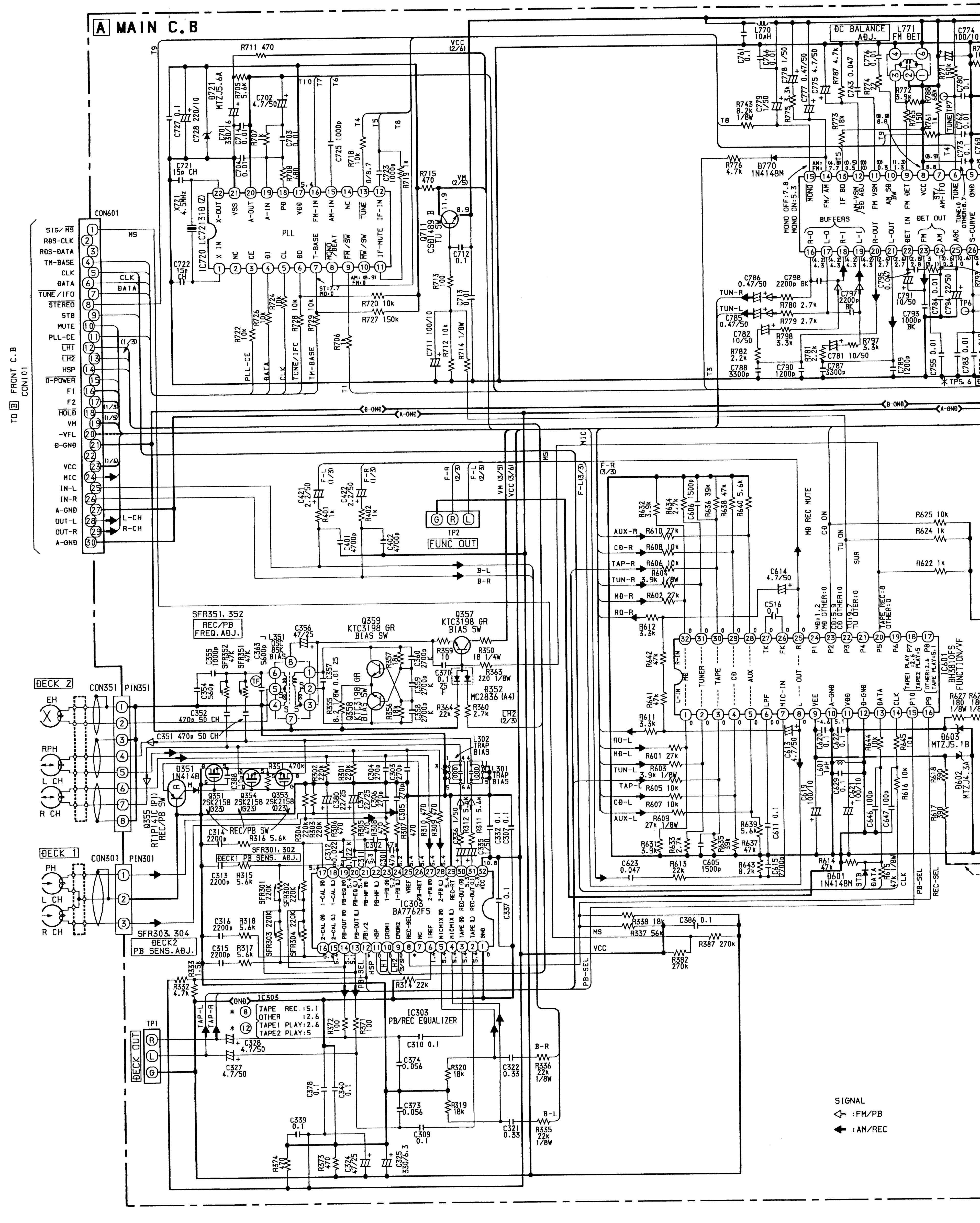
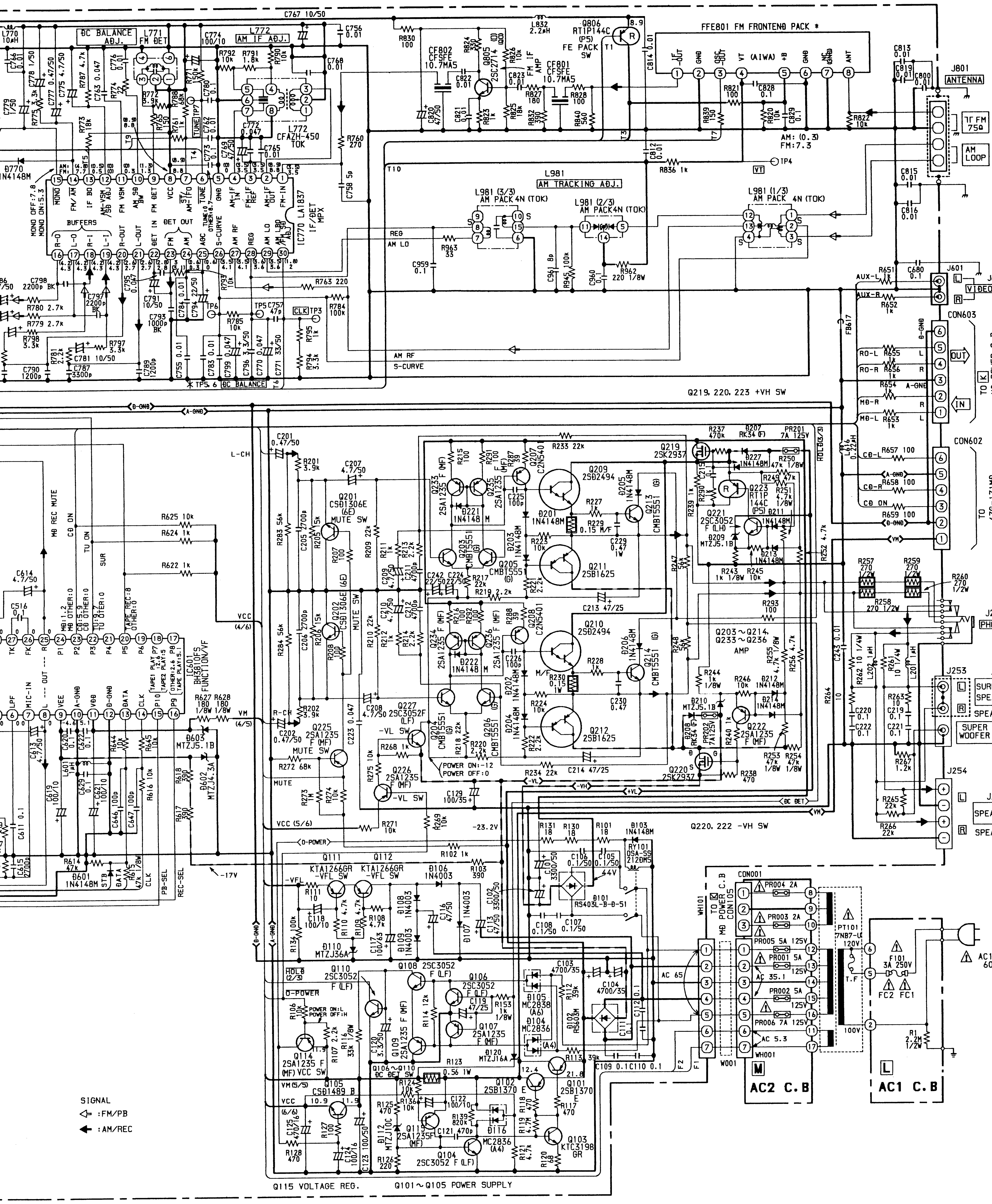
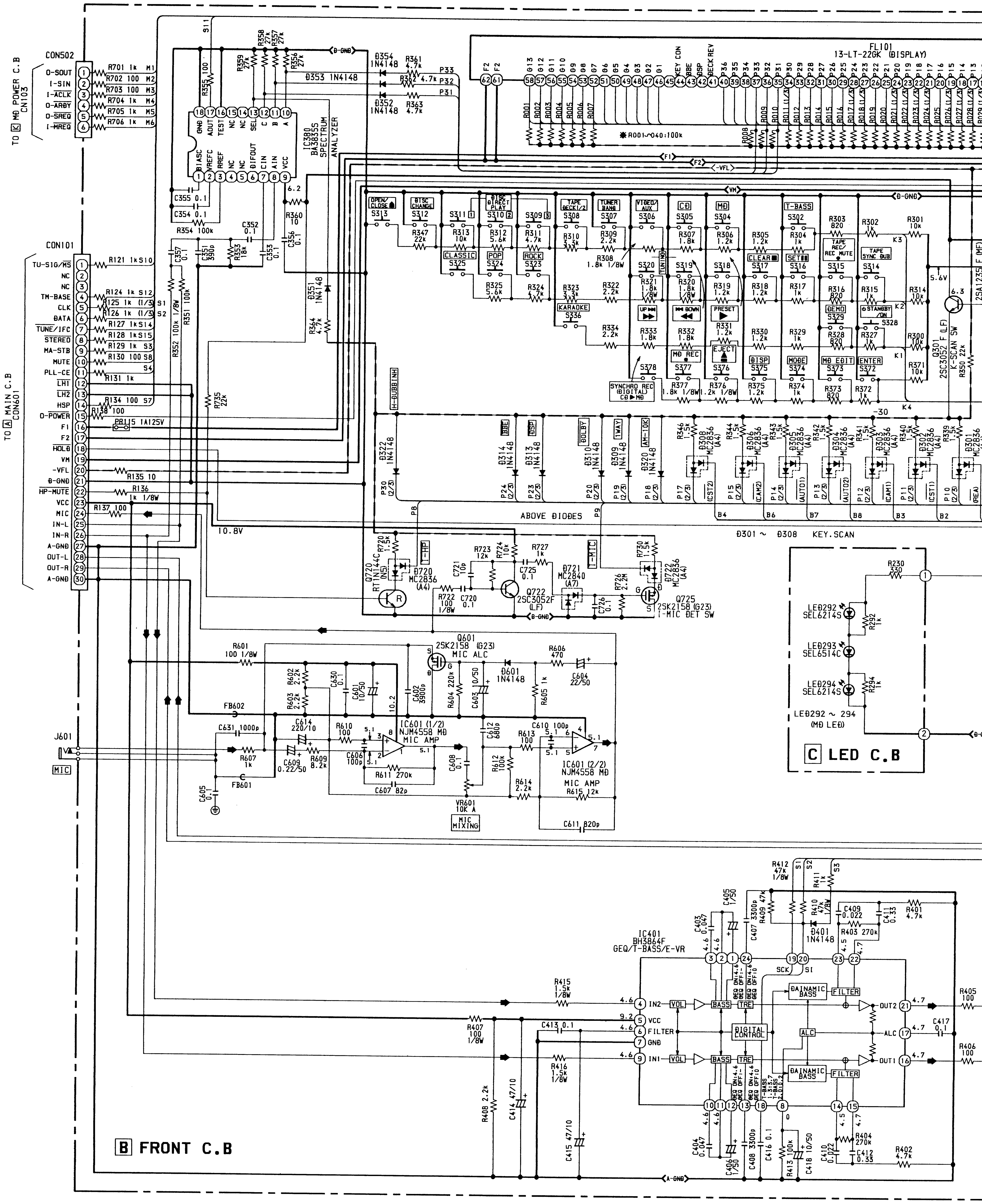
G
H
I
J
A MAIN C.B
TO DECK2
CON351
PIN351
TO DECK1
CON301
PIN301
TO B
FRONT C.B
CON101
CON601
J801
ANTENNA
AM LOOP
FM 75Ω
SHIELD SHEET
C680
TO 4ZG-1Z1MD 3CD C.B CON5
FC602
CON602
J601
VIDEO/AUX
R
L
J601
TO K
MD POWER C.B
CN104
FC603
CON603
TO M
AC2 C.B
WH001
BLK
W001
WHT
WH101
J253
SURROUND SPEAKERS
SUPER WOOFER
J253
SPEAKER IMP:16Ω
⊕
⊖
J254
SPEAKERS
SPEAKER IMP:6Ω
J254
J252
PHONES
J252
IC601
IC720
IC303
L981
FFE801
CF801
CF802
L351
SFR351
SFR352
SFR301
SFR302
SFR303
SFR304
TP1
TP2
TP3
TP4
TP7
X721
R258
R257
R260
R259

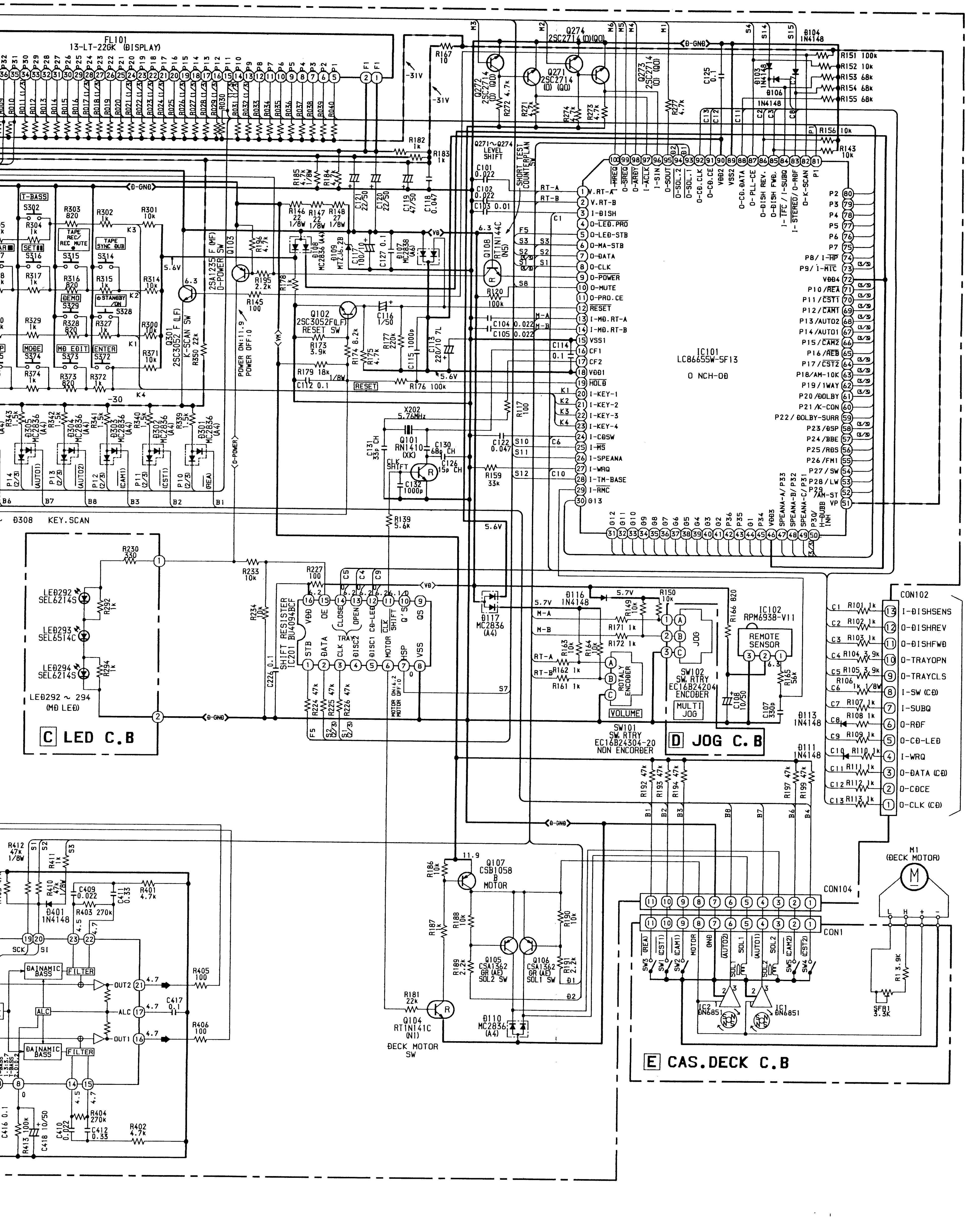
SCHEMATIC DIAGRAM-1 (MAIN SECTION)


A MAIN C.B
TO B FRONT C.B CON101
CON601
SIG/MS
RDS-CLK
RDS-DATA
TM-BASE
CLK
DATA
TUNE/IFO
STEREO
STB
MUTE
PLL-CE
LH1
LH2
HSP
D-POWER
F1
F2
HOLD
VM
-VFL
D-GND
VCC
MIC
IN-L
IN-R
A-GND
OUT-L
OUT-R
A-GND
L-CH
R-CH
IC720 LC72131D
PLL
X721 4.5MHz
Q711 CS9014S B TU SW
VCC
VM
DC BALANCE ADJ.
L771 FM DET
BUFFERS
DET OUT
TP2
FUNC OUT
B-L
B-R
B-GND
A-GND
MD REC MUTE
CD ON
TU ON
SUR
IC601 BH3810FS FUNCTION/VF
SFR351, 352 REC/PB FREQ. ADJ.
L351 OSC BIAS
Q359 KTC3198 GR BIAS SW
Q357 KTC3198 GR BIAS SW
D352 MC2836 (A4)
L302 TRAP BIAS
L301 TRAP BIAS
DECK 2
CON351
PIN351
EH
RPH
L CH
R CH
D351 1N4148
Q351 2SK2158
Q354 2SK2158
Q353 2SK2158
Q355 RT1P141C REC/PB SW
DECK 1
CON301
PIN301
PH
SFR301, 302 DECK1 PB SENS. ADJ.
SFR303, 304 DECK2 PB SENS. ADJ.
IC303 BA7762FS
IC303 PB/REC EQUALIZER
TAPE REC :5.1
OTHER :2.6
TAPE1 PLAY:2.6
TAPE2 PLAY:5
TP1
DECK OUT
MS
VCC
PB-SEL
D601 1N4148M
D603 MTZJ5.1B
D602 MTZJ4.3A
D721 MTZJ5.6A
D770 1N4148M
SIGNAL
:FM/PB
:AM/REC

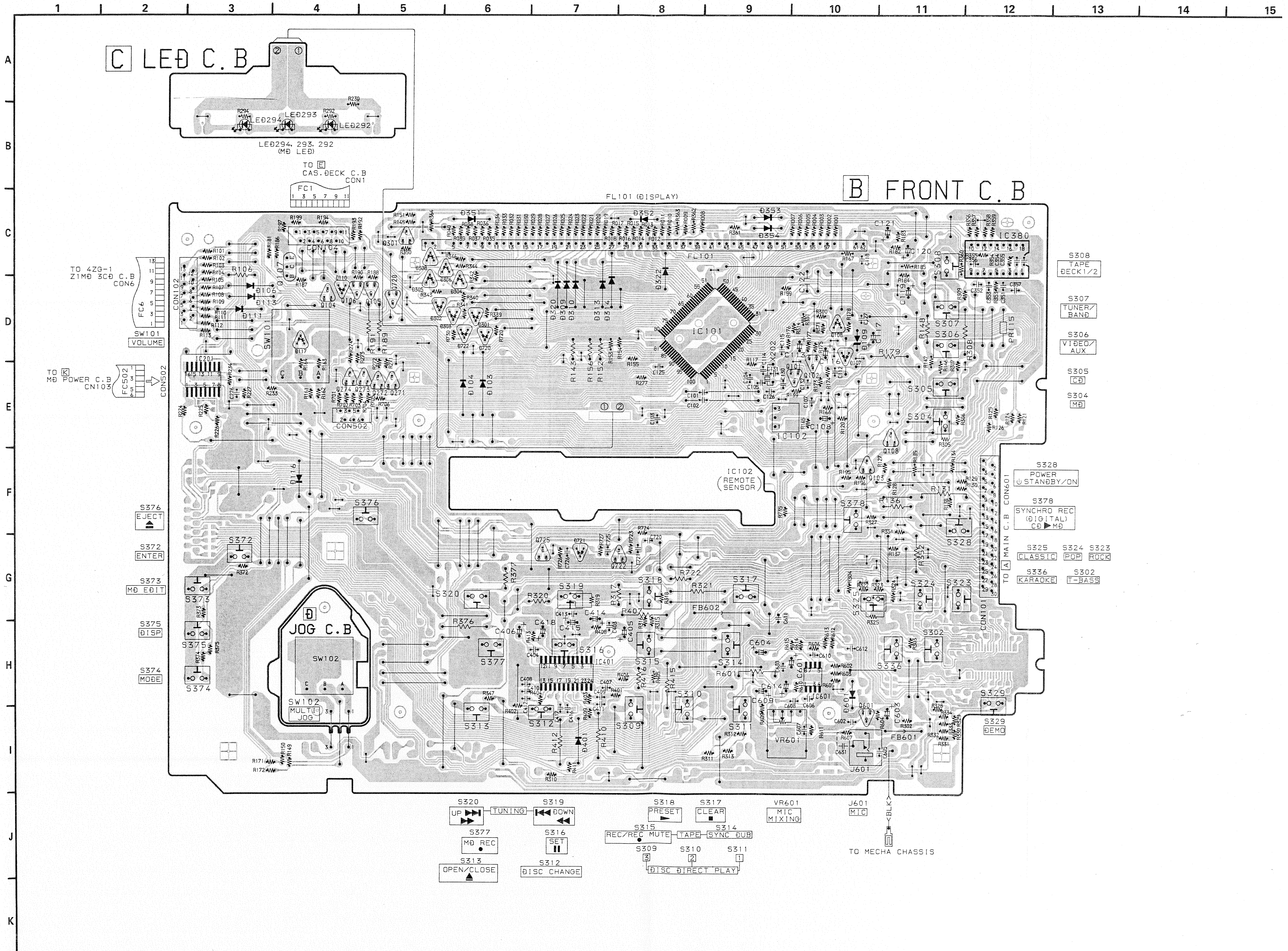

FFE801 FM FRONTEND PACK *
J801 ANTENNA
FM 75Ω
AM LOOP
AM: (0.3)
FM: 7.3
Q806 RT1P144C (P5) FE PACK SW
Q805 2SC2714 FM IF AMP
CF801 CFSFE 10.7MA5
CF802 CFSFE 10.7MA5
DC BALANCE ADJ.
L771 FM DET
L772 AM IF ADJ.
L772 CFAZH-450 TOK
IC770 LA1837 IF/DET MPX
L981 AM TRACKING ADJ.
L981 (3/3) AM PACK 4N (TOK)
L981 (2/3) AM PACK4N (TOK)
L981 (1/3) AM PACK 4N (TOK)
BUFFERS
DET OUT
AM RF
S-CURVE
TP4
TP5
TP6
CLK TP3
TPS. 6 DC BALANCE
J601 VIDEO/AUX
AUX-L
AUX-R
CON603 TO K MD POWER C.B CN104
OUT
IN
Q219, 220, 223 +VH SW
CON602 TO 4ZG-1Z1MD 3CD C.B CON5
L-CH
R-CH
Q201 CSD1306E (6E) MUTE SW
Q202 CSD1306E MUTE SW
Q203~Q214, Q233~Q236 AMP
Q209 2SD2494
Q210 2SD2494
Q211 2SB1625
Q212 2SB1625
Q219 2SK2937
Q220 2SK2937
Q221 2SC3052 F (LH)
Q222 2SA1235 F (MF)
Q223 RT1P144C (P5)
Q225 2SA1235 F (MF) MUTE SW
Q226 2SA1235 (MF) -VL SW
Q227 2SC3052F (LF) -VL SW
POWER ON: -12
POWER OFF: 0
IC601 BH3810FS FUNCTION/VF
MD REC MUTE
CD ON
TU ON
SUR
J252 PHONES
J253 SURROUND SPEAKERS SPEAKER IMP: 16Ω
SUPER WOOFER
J254 SPEAKERS SPEAKER IMP: 6Ω
Q220, 222 -VH SW
Q111 KTA1266GR -VFL SW
Q112 KTA1266GR -VFL SW
Q110 2SC3052 F (LF)
Q114 2SA1235 F (MF) VCC SW
HOLD (2/3)
D-POWER
POWER ON: L
POWER OFF: H
Q108 2SC3052 F (LF)
Q106 2SC3052 F (LF)
Q107 2SA1235 F (MF)
Q109 2SA1235 F (MF)
Q105 CSD1489 B
Q102 2SB1370 E
Q101 2SB1370 E
Q103 KTC3198 GR
Q104 2SC3052 F (LF)
Q113 2SA1235F (MF)
Q106~Q110 DC DET SW
RY101 DSA-SS 212DMS
D101 RS403L-B-D-51
AC 65
CON001 TO M MD POWER C.B CON105
WH101
W001
WH001
PT101 7NB7-U
T.F
F101 3A 250V
FC2 FC1
AC120V 60Hz
AC 35.1
AC 5.3
PR001 5A
PR002 5A
PR003 2A
PR004 2A
PR005 5A 125V
PR006 7A 125V
M AC2 C.B
L AC1 C.B
SIGNAL
⇦ : FM/PB
← : AM/REC
Q115 VOLTAGE REG.
Q101~Q105 POWER SUPPLY

SCHEMATIC DIAGRAM-2 (FRONT SECTION)


CON502
TO K MD POWER C.B CN103
O-SOUT
I-SIN
I-ACLK
O-ARDY
O-SREQ
I-MREQ
CON101
TO A MAIN C.B CON601
TU-SIG/MS
NC
NC
TM-BASE
CLK
DATA
TUNE/IFC
STEREO
MA-STB
MUTE
PLL-CE
LH1
LH2
HSP
O-POWER
F1
F2
HOLD
VM
-VFL
D-GND
HP-MUTE
VCC
MIC
IN-L
IN-R
A-GND
OUT-L
OUT-R
A-GND
IC380 BA3835S SPECTRUM ANALYZER
FL101 13-LT-22GK (DISPLAY)
*R001~040:100k
OPEN/CLOSE
DISC CHANGE
DISC DIRECT PLAY
TAPE DECK1/2
TUNER BAND
VIDEO/AUX
CD
MD
T-BASS
CLASSIC
POP
ROCK
TUNING
CLEAR
SET
TAPE REC/REC MUTE
TAPE SYNC DUB
KARAOKE
UP
DOWN
PRESET
DEMO
STANDBY/ON
SYNCHRO REC (DIGITAL) CD▶MD
MD REC
EJECT
DISP
MODE
MD EDIT
ENTER
Q301 2SC3052 F (LF) K-SCAN SW
2SA1235 F (MF)
BBE
DSP
DOLBY
1WAY
AM-10K
H-DUBB INH
ABOVE DIODES
D301 ~ D308 KEY.SCAN
10.8V
Q720 RT1N144C (N5)
D720 MC2836 (A4)
I-HP
I-MIC
Q722 2SC3052F (LF)
D721 MC2840 (A7)
Q725 2SK2158 (G23) I-MIC DET SW
D722 MC2836 (A4)
Q601 2SK2158 (G23) MIC ALC
D601 1N4148
IC601 (1/2) NJM4558 MD MIC AMP
IC601 (2/2) NJM4558 MD MIC AMP
VR601 10K A
MIC MIXING
J601
MIC
FB601
FB602
C LED C.B
LED292 SEL6214S
LED293 SEL6514C
LED294 SEL6214S
LED292 ~ 294 (MD LED)
IC401 BH3864F GEQ/T-BASS/E-VR
IN2
VCC
FILTER
GND
IN1
VOL
BASS
TRE
DIGITAL CONTROL
DAINAMIC BASS
FILTER
ALC
OUT2
OUT1
D401 1N4148
B FRONT C.B
A-GND
D-GND


FL101
13-LT-22GK (DISPLAY)
IC101
LC86655W-5F13
0 NCH-00
0 KEY.SCAN
Q271~Q274 LEVEL SHIFT
Q274 2SC2714 (D)(QO)
Q271 2SC2714 (D) (QO)
Q272 2SC2714 (D) (QO)
Q273 2SC2714 (D) (QO)
Q102 2SC3052F(LF) RESET SW
Q103 2SA1235 F (MF) D-POWER SW
Q301 2SC3052 F (LF) K-SCAN SW
Q108 RT1N144C (N5)
Q101 RN1410 (XK) CLK SHIFT
X202 5.76MHz
SHORT TEST COUNTER PLAN
POWER ON:11.9 POWER OFF:0
RESET
T-BASS
TAPE REC/ REC MUTE
TAPE SYNC DUB
SET
DEMO
STANDBY /ON
MODE
MD EDIT
ENTER
LED292 SEL6214S
LED293 SEL6514C
LED294 SEL6214S
LED292 ~ 294 (MD LED)
C LED C.B
SHIFT RESISTER IC201 BU4094BCF
D116 1N4148
D117 MC2836 (A4)
SW101 SW. RTRY EC16B24304-20 NON ENCORDER
VOLUME
ROTALY ENCODER
SW102 SW. RTRY EC16B24204 ENCODER
MULTI JOG
JOG
IC102 RPM6938-V11
REMOTE SENSOR
D JOG C.B
D113 1N4148
D111 1N4148
CON102
I-DISHSENS
O-DISHREV
O-DISHFWD
O-TRAYOPN
O-TRAYCLS
I-SW (CD)
I-SUBQ
O-RDF
O-CD-LED
I-WRQ
O-DATA (CD)
O-CDCE
O-CLK (CD)
TO 4ZG-1Z1MD 3CD C.B CON6
D104 1N4148
D106 1N4148
Q107 CSB1058 B MOTOR
Q105 CSA1362 GR (AE) SOL2 SW
Q106 CSA1362 GR (AE) SOL1 SW
Q104 RT1N141C (N1) DECK MOTOR SW
D110 MC2836 (A4)
CON104
CON1
M1 (DECK MOTOR)
SFB1 3.3K
R1 3.9K
IC1 DN6851
IC2 DN6851
E CAS.DECK C.B
D401 1N4148
BAINAMIC BASS
FILTER
ALC
OUT2
OUT1

WIRING-2 (FRONT, MD POWER, CAS, DECK, AC1-2 SECTION)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A
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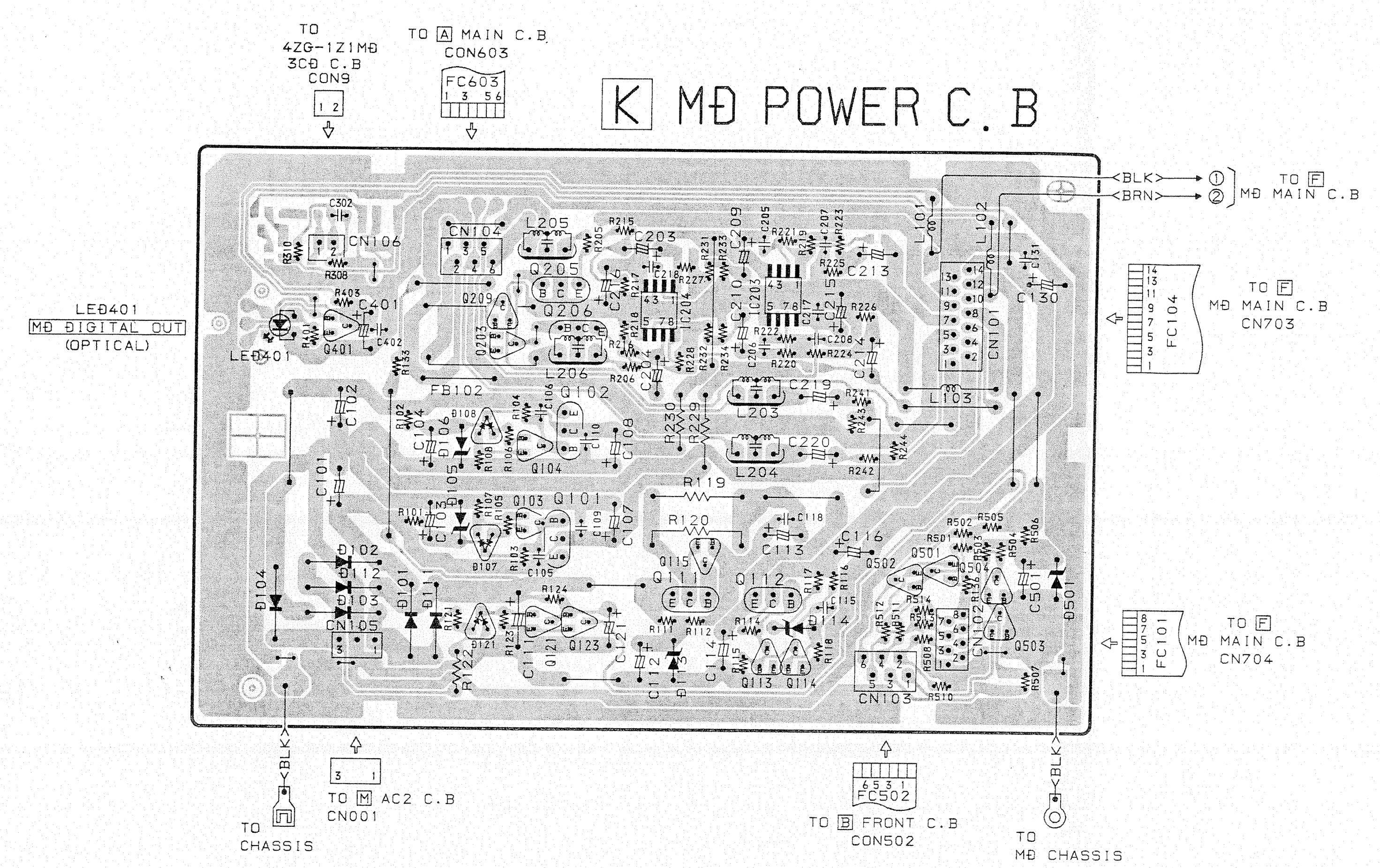
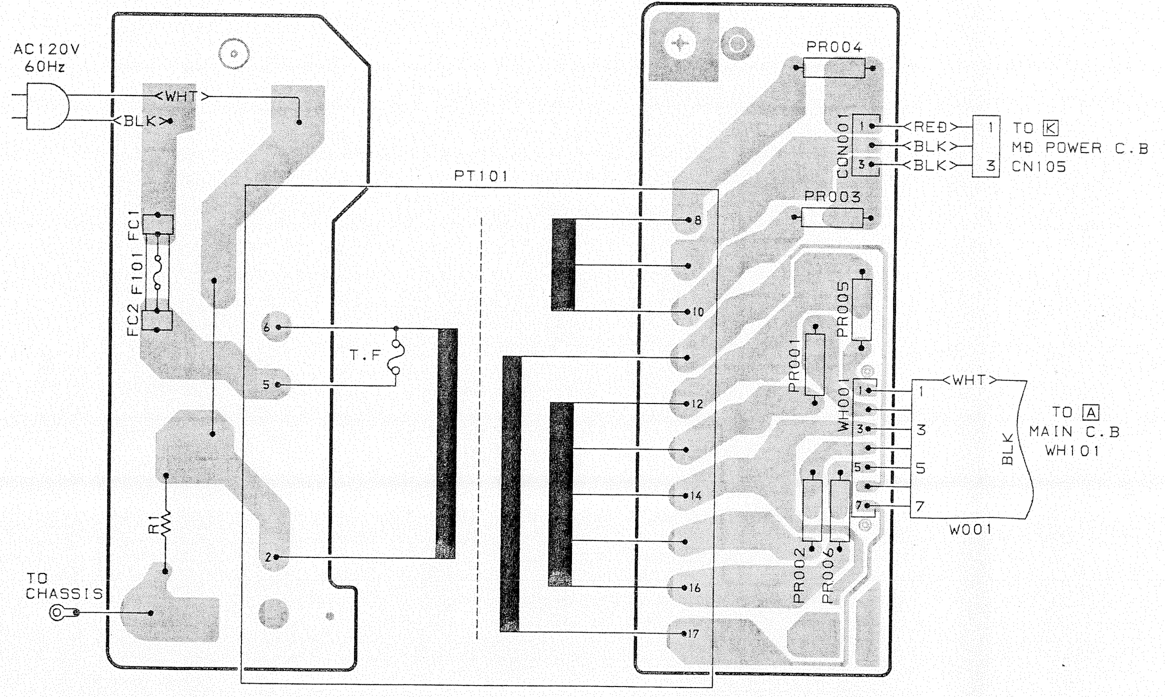
F
G
H
I
J
K
C LED C.B
LED294
LED293
LED292
R294
R292
R230
LED294, 293, 292
(MD LED)
TO E
CAS.DECK C.B
CON1
FC1
B FRONT C.B
FL101 (DISPLAY)
TO 4ZG-1
Z1MD 3CD C.B
CON6
FC6
CON102
SW101
VOLUME
TO K
MD POWER C.B
CN103
FC502
CON502
IC201
IC101
IC102
IC380
IC401
IC102
(REMOTE
SENSOR)
S308
TAPE
DECK1/2
S307
TUNER/
BAND
S306
VIDEO/
AUX
S305
CD
S304
MD
S328
POWER
STANDBY/ON
S378
SYNCHRO REC
(DIGITAL)
CD ▶ MD
S325
CLASSIC
S324
POP
S323
ROCK
S336
KARAOKE
S302
T-BASS
S329
DEMO
TO A MAIN C.B CON601
CON101
S376
EJECT
S372
ENTER
S373
MD EDIT
S375
DISP
S374
MODE
D JOG C.B
SW102
MULTI JOG
VR601
J601
FB601
FB602
S320
UP
TUNING
S319
DOWN
S377
MD REC
S316
SET
S313
OPEN/CLOSE
S312
DISC CHANGE
S318
PRESET
S317
CLEAR
S315
REC/REC MUTE
TAPE
S314
SYNC DUB
S309
3
S310
2
S311
1
DISC DIRECT PLAY
VR601
MIC
MIXING
J601
MIC
BLK
TO MECHA CHASSIS

K MD POWER C.B

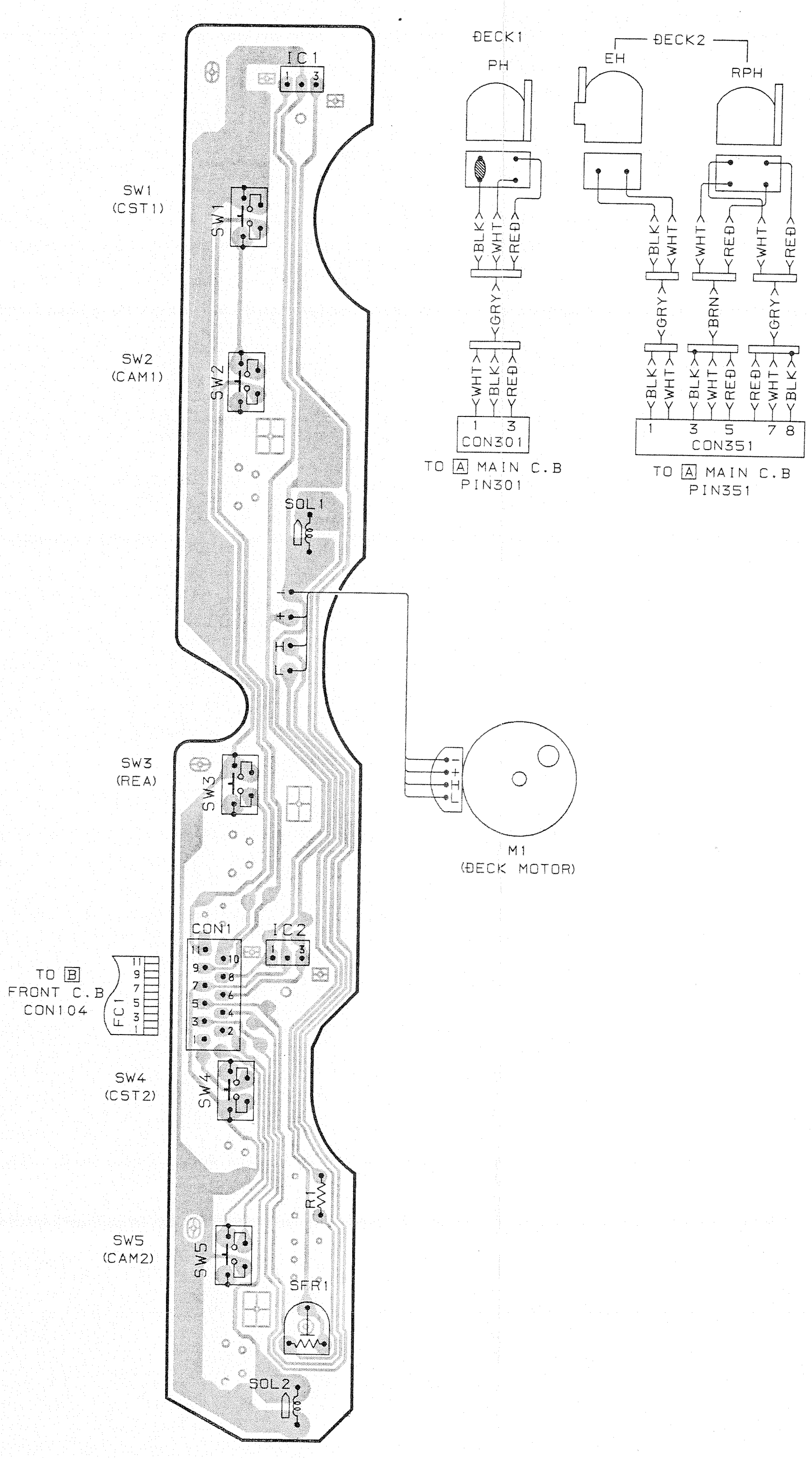

TO 4ZG-1Z1MD 3CD C.B CON9
TO A MAIN C.B CON603
FC603
LED401
MD DIGITAL OUT (OPTICAL)
<BLK> ① <BRN> ② TO F MD MAIN C.B
TO F MD MAIN C.B CN703
FC104
TO F MD MAIN C.B CN704
FC101
CN106
CN104
CN101
CN102
CN103
CN105
TO CHASSIS
TO M AC2 C.B CN001
FC502
TO B FRONT C.B CON502
TO MD CHASSIS
<BLK>

L AC1 C.B

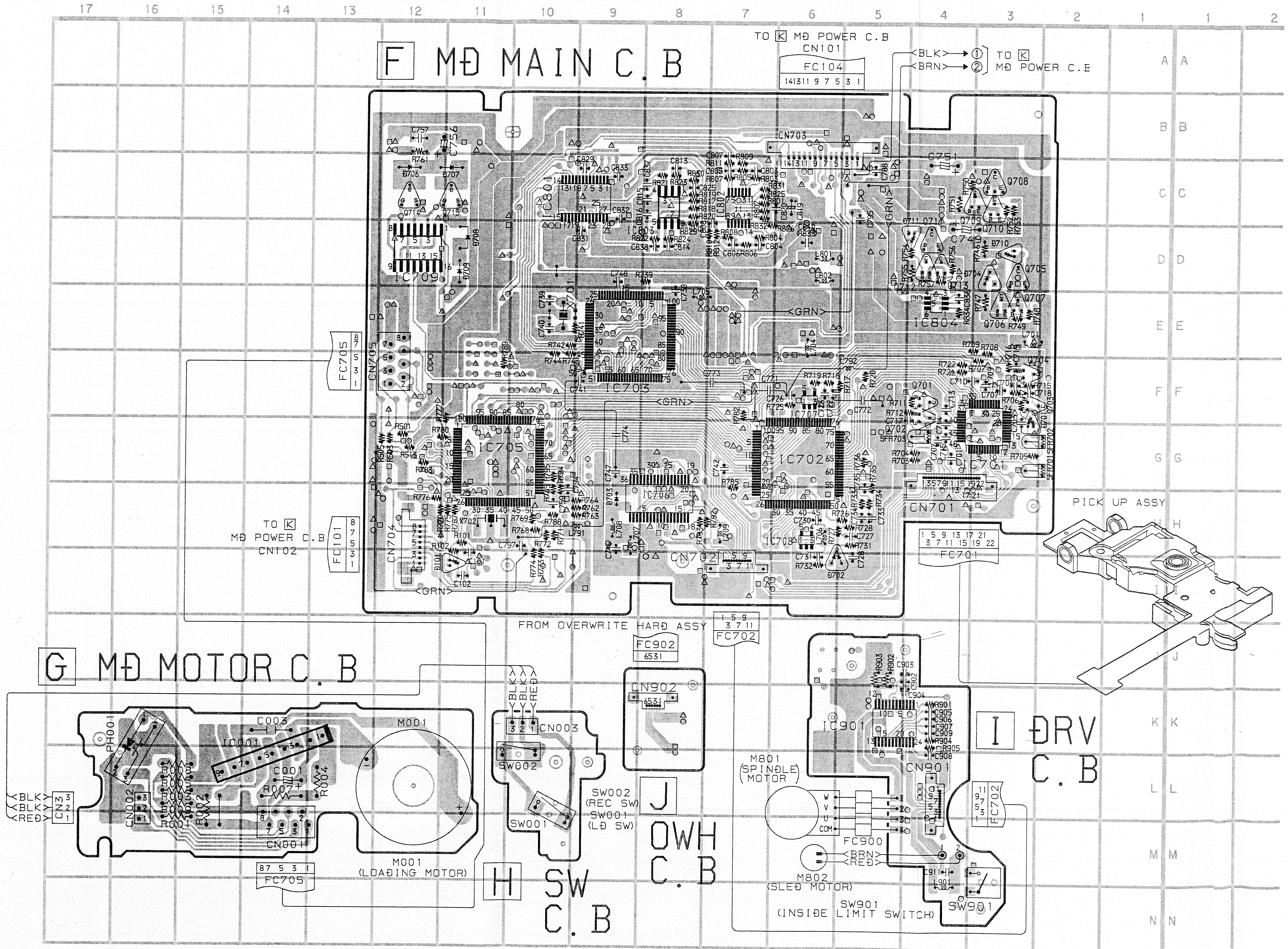
M AC2 C.B

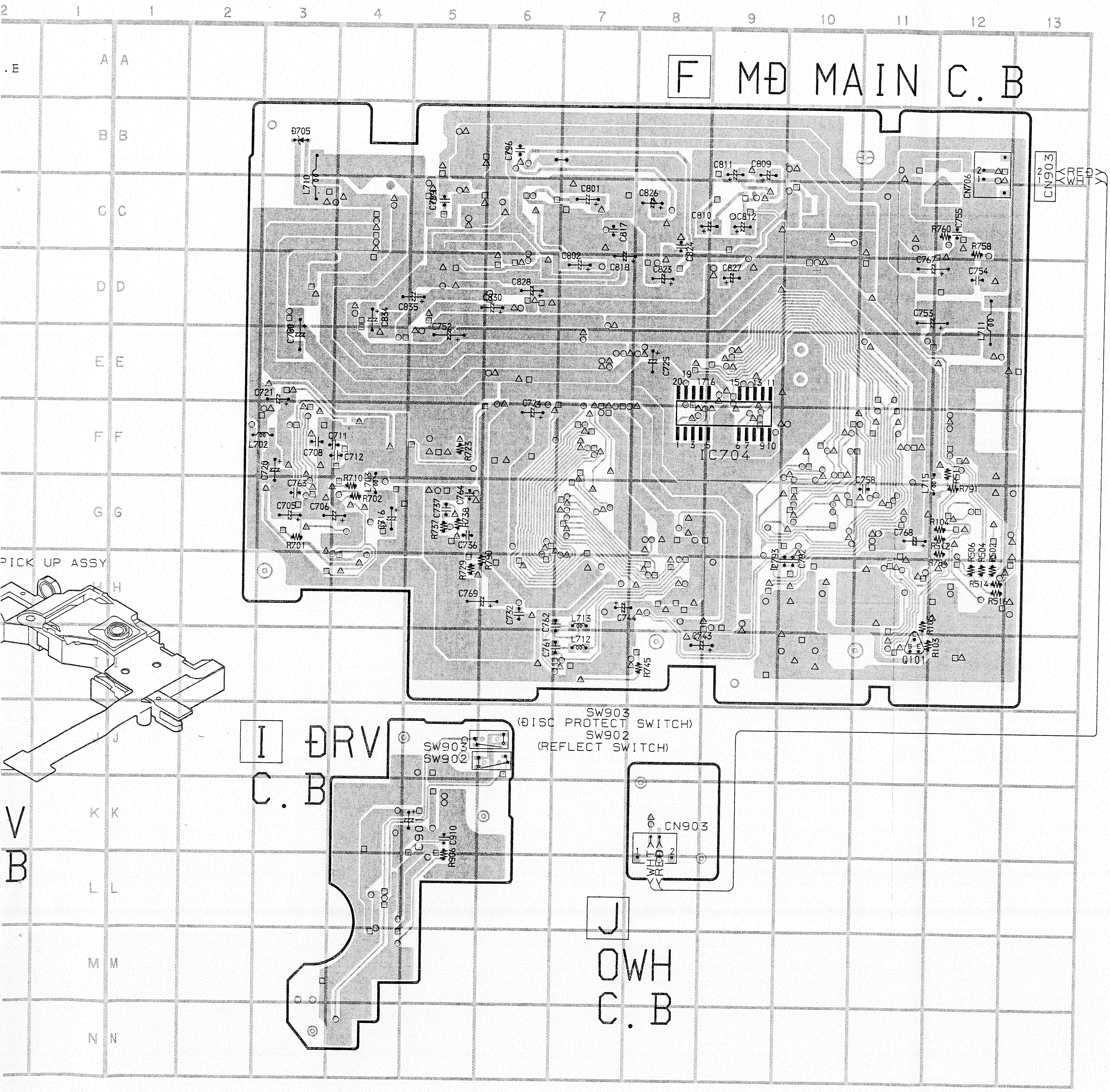

AC120V 60Hz
<WHT>
<BLK>
FC1
F101
FC2
T.F
R1
TO CHASSIS
PT101
PR004
PR003
PR005
PR001
PR002
PR006
CON001
<RED>
<BLK>
<BLK>
TO K MD POWER C.B CN105
WH001
<WHT>
BLK
TO A MAIN C.B WH101
W001

E CAS. DECK C.B

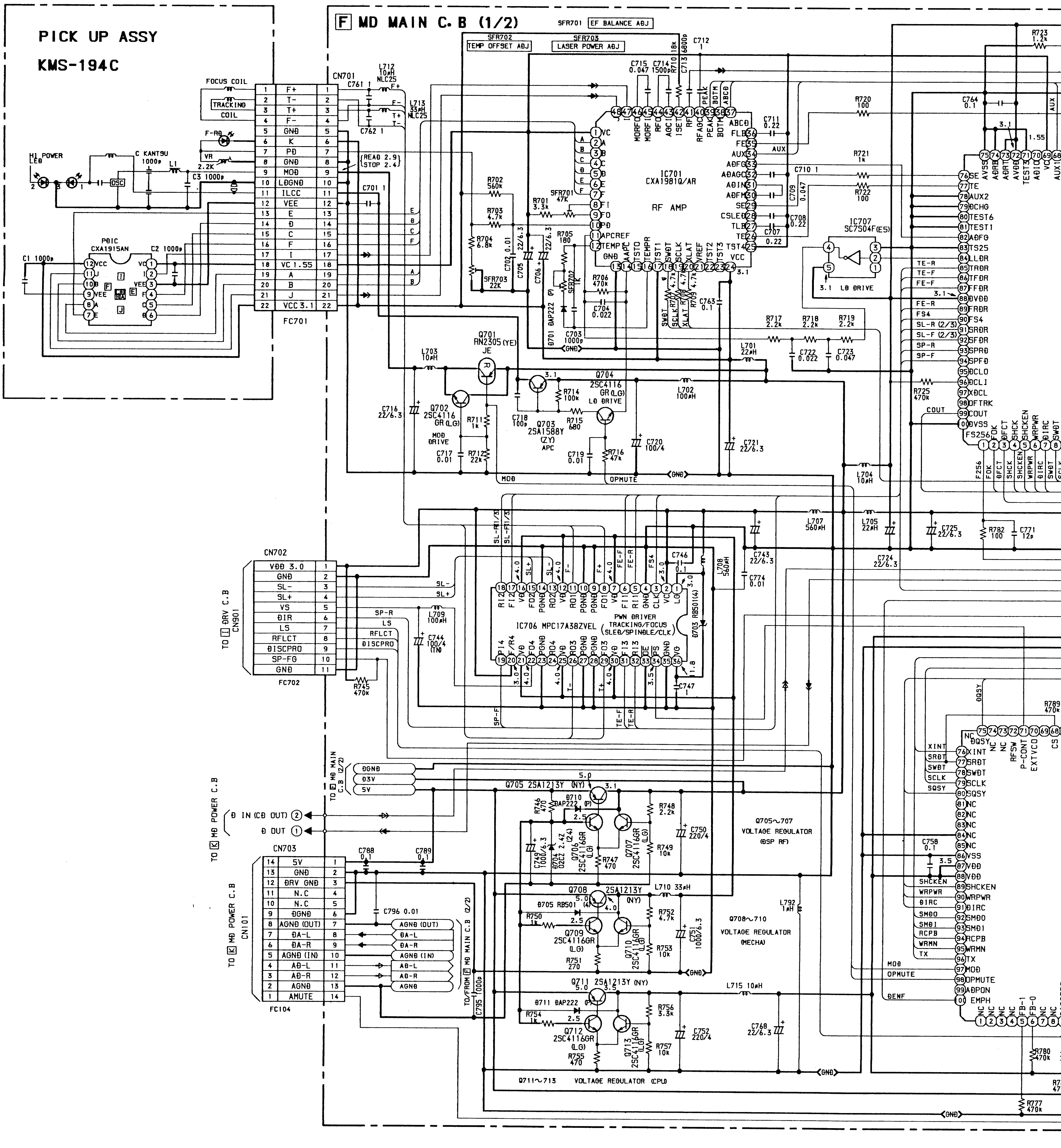

IC1
SW1 (CST1)
SW2 (CAM1)
SOL1
SW3 (REA)
CON1
IC2
TO B FRONT C.B CON104
FC1
SW4 (CST2)
SW5 (CAM2)
R1
SFR1
SOL2
DECK1
PH
DECK2
EH
RPH
<BLK> <WHT> <RED>
<GRY>
<WHT> <BLK> <RED>
CON301
TO A MAIN C.B PIN301
<BLK> <WHT> <WHT> <RED> <WHT> <RED>
<GRY> <BRN> <GRY>
<BLK> <WHT> <BLK> <WHT> <RED> <RED> <WHT> <BLK>
CON351
TO A MAIN C.B PIN351
M1 (DECK MOTOR)

WIRING-3 (MD MAIN SECTION)

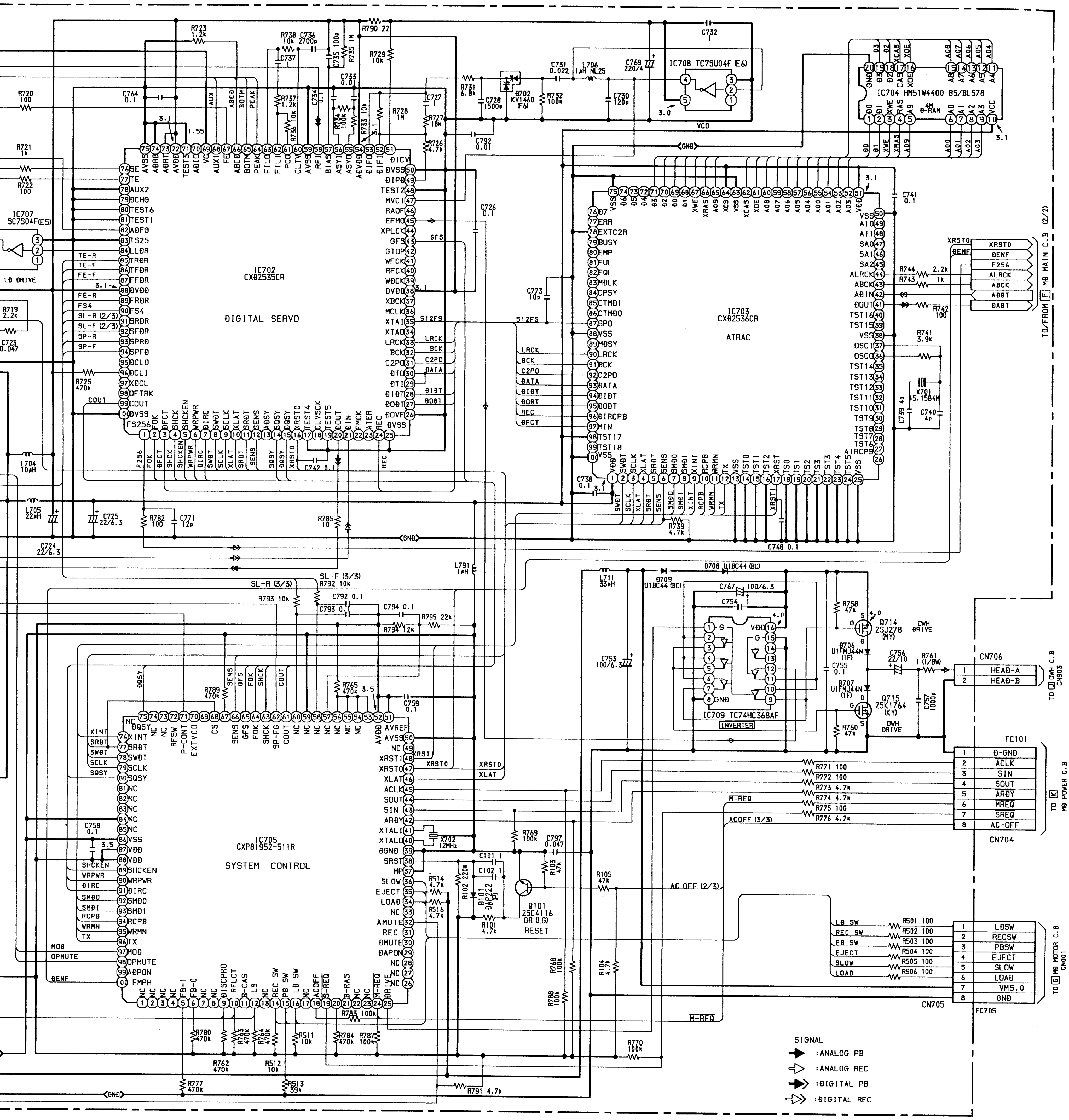

17 16 15 14 13 12 11 10 9 8 7 6 5 4 3 2 1 1 2
A B C D E F G H I J K L M N
F MD MAIN C.B
TO K MD POWER C.B CN101
FC104
14 13 11 9 7 5 3 1
<BLK> ① <BRN> ② TO K MD POWER C.B
CN703
IC801
IC802
IC803
IC804
IC709
IC703
IC705
IC706
IC702
IC701
IC707
IC708
CN705
FC705
TO K MD POWER C.B CN102
FC101
CN704
CN702
CN701
FC701
1 5 9 13 17 21
3 7 11 15 19 22
<GRN>
PICK UP ASSY
FROM OVERWRITE HARD ASSY
FC902
6531
1 5 9
3 7 11
FC702
G MD MOTOR C.B
M001
IC001
PH001
CN002
CN001
CN3
<BLK <BLK <RED
87 5 3 1
FC705
M001 (LOADING MOTOR)
BLK BLK RED
CN003
SW002
SW001
H SW C.B
SW002 (REC SW)
SW001 (LD SW)
CN902
J OWH C.B
IC901
CN901
I DRV C.B
M801 (SPINDLE MOTOR)
W V U COM
FC900
M802 (SLED MOTOR)
<BRN <RED
SW901 (INSIDE LIMIT SWITCH)
SW901
FC702


F MD MAIN C.B
I DRV C.B
J OWH C.B
PICK UP ASSY
SW903 (DISC PROTECT SWITCH)
SW902 (REFLECT SWITCH)
SW903
SW902
CN903
IC704
CN706
Q101
RED
WHT

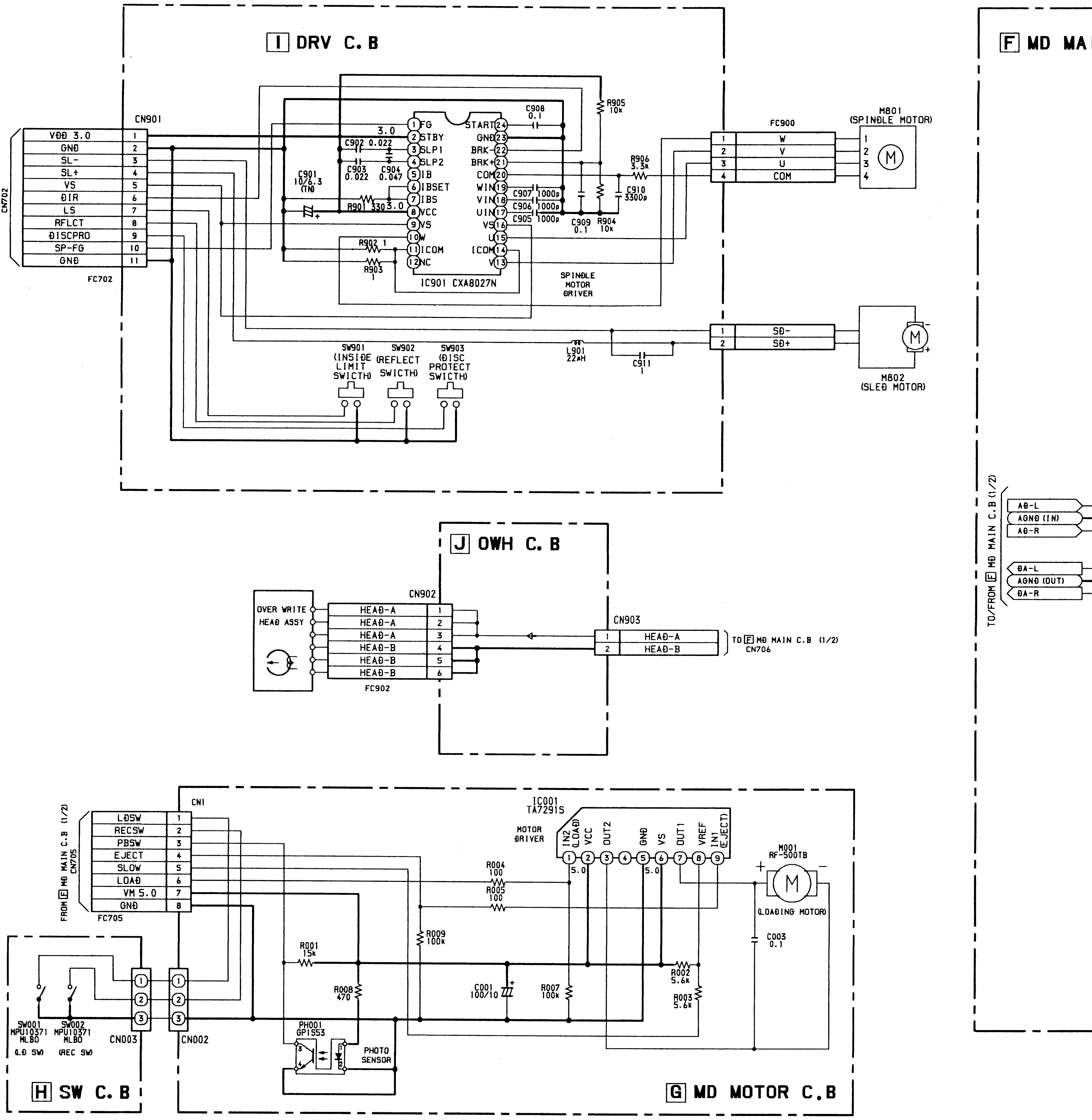
SCHEMATIC DIAGRAM-3 (MD MAIN SECTION 1/2)



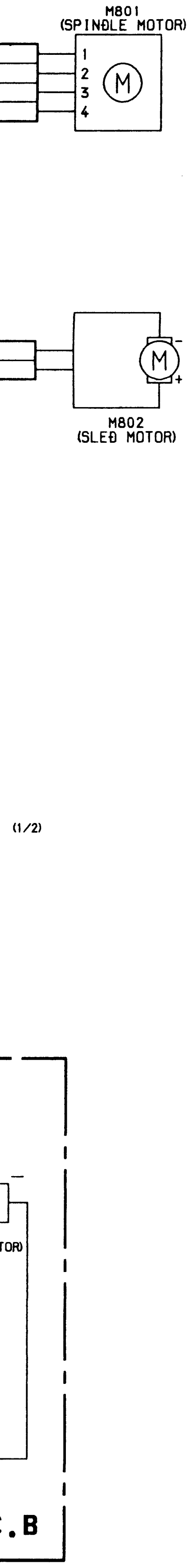
PICK UP ASSY
KMS-194C
F MD MAIN C.B (1/2)
SFR701 EF BALANCE ADJ
SFR702 TEMP OFFSET ADJ
SFR703 LASER POWER ADJ
CN701
FC701
IC701 CXA1981Q/AR
RF AMP
IC707 SC7S04F(E5)
3.1 LD DRIVE
Q701 RN2305(YE) JE
Q702 2SC4116 GR(LG) MOD DRIVE
Q703 2SA1588Y (ZY) APC
Q704 2SC4116 GR(LG) LD DRIVE
CN702
FC702
TO D DRV C.B CN901
IC706 MPC17A38ZVEL
PWM DRIVER TRACKING/FOCUS (SLED/SPINDLE/CLK)
TO E MD MAIN C.B (2/2)
DGND
D3V
5V
TO K MD POWER C.B
D IN (CD OUT) ②
D OUT ①
CN703
FC104
TO K MD POWER C.B CN101
TO/FROM E MD MAIN C.B (2/2)
Q705 2SA1213Y (NY)
Q705~707 VOLTAGE REGULATOR (DSP RF)
Q708 2SA1213Y (NY)
Q708~710 VOLTAGE REGULATOR (MECHA)
Q711 2SA1213Y (NY)
Q711~713 VOLTAGE REGULATOR (CPU)
L715 10μH

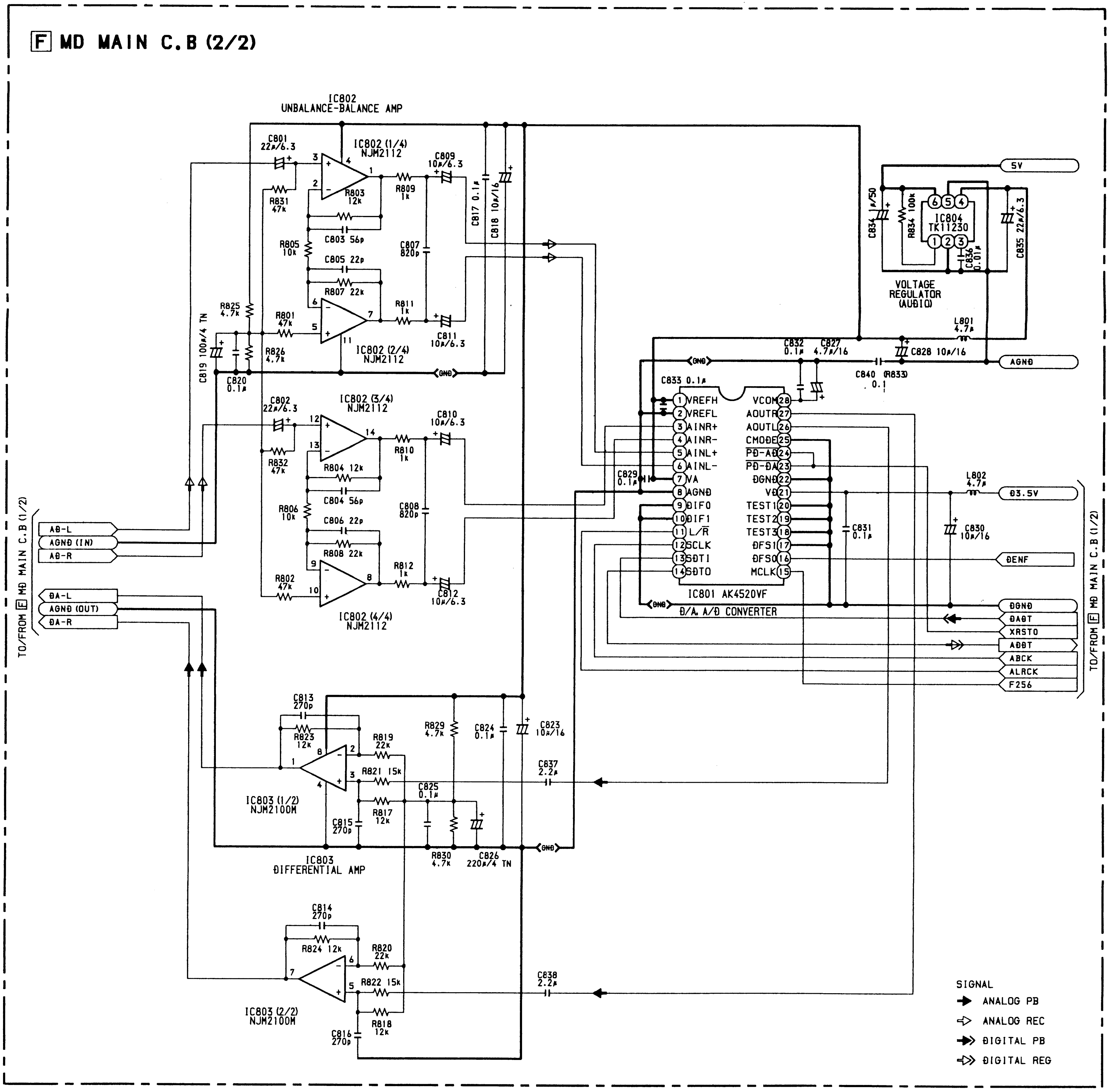

IC702
CXD2535CR
DIGITAL SERVO
IC703
CXD2536CR
ATRAC
IC704 HM51W4400 BS/BLS78
4M D-RAM
IC705
CXP81952-511R
SYSTEM CONTROL
IC707
SC7S04F(E5)
LD DRIVE
IC708 TC7SU04F (E6)
IC709 TC74HC368AF
INVERTER
X701
45.1584M
X702
12MHz
Q101
2SC4116
GR (LG)
RESET
Q714
2SJ278
(MY)
OWH
DRIVE
Q715
2SK1764
(KY)
OWH
DRIVE
D702
KV1460
(F6)
D708 U1BC44 (BC)
D709
U1BC44 (BC)
D706
U1FMJ44N
(1F)
D707
U1FMJ44N
(1F)
D101
DAP222
(P)
L704
10μH
L705
22μH
L706
1μH NL25
L711
33μH
L791
1μH
VCO
GND
TO/FROM F MD MAIN C.B (2/2)
XRST0
DENF
F256
ALRCK
ABCK
ADDT
DADT
CN706
1 HEAD-A
2 HEAD-B
TO J OWH C.B CN903
FC101
1 D-GND
2 ACLK
3 SIN
4 SOUT
5 ARDY
6 MREQ
7 SREQ
8 AC-OFF
CN704
TO K MD POWER C.B CN102
1 LDSW
2 RECSW
3 PBSW
4 EJECT
5 SLOW
6 LOAD
7 VM5.0
8 GND
CN705
FC705
TO G MD MOTOR C.B CN001
SIGNAL
:ANALOG PB
:ANALOG REC
:DIGITAL PB
:DIGITAL REC

SCHEMATIC DIAGRAM-4 (MD MAIN SECTION 2/2)

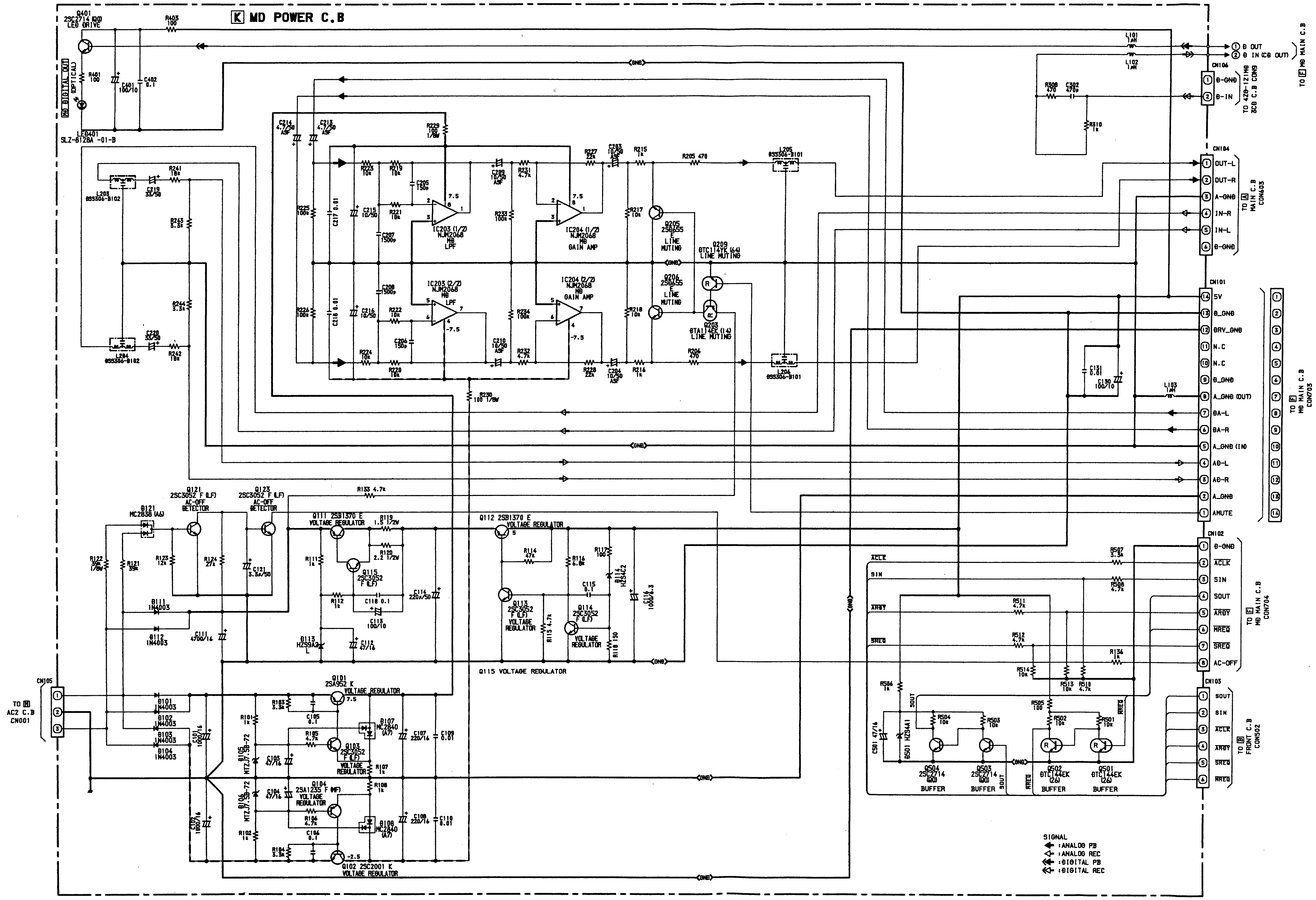


I DRV C. B
CN901
TO F MD MAIN C.B (1/2) CN702
VDD 3.0
GND
SL-
SL+
VS
DIR
LS
RFLCT
DISCPRO
SP-FG
GND
FC702
C902 0.022
C903 0.022
C904 0.047
C901 10/6.3 (TN)
R901 330
3.0
R902 1
R903 1
FG
STBY
SLP1
SLP2
IB
IBSET
IBS
VCC
VS
W
ICOM
NC
START
GND
BRK-
BRK+
COM
WIN
VIN
UIN
VS
U
ICOM
V
IC901 CXA8027N
SPINDLE MOTOR DRIVER
C908 0.1
R905 10k
R906 3.3k
C907 1000p
C906 1000p
C905 1000p
C910 3300p
C909 0.1
R904 10k
FC900
W
V
U
COM
M801 (SPINDLE MOTOR)
SD-
SD+
M802 (SLED MOTOR)
L901 22μH
C911 1
SW901 (INSIDE LIMIT SWICTH)
SW902 (REFLECT SWICTH)
SW903 (DISC PROTECT SWICTH)
J OWH C. B
OVER WRITE HEAD ASSY
CN902
HEAD-A
HEAD-A
HEAD-A
HEAD-B
HEAD-B
HEAD-B
FC902
CN903
HEAD-A
HEAD-B
TO F MD MAIN C.B (1/2) CN706
F MD MA
TO/FROM F MD MAIN C.B (1/2)
AD-L
AGND (IN)
AD-R
DA-L
AGND (OUT)
DA-R
CN1
FROM F MD MAIN C.B (1/2) CN705
LDSW
RECSW
PBSW
EJECT
SLOW
LOAD
VM 5.0
GND
FC705
IC001 TA7291S
MOTOR DRIVER
IN2 (LOAD)
VCC
OUT2
GND
VS
OUT1
VREF
IN1 (EJECT)
5.0
5.0
R004 100
R005 100
R009 100k
R001 15k
R008 470
C001 100/10
R007 100k
R002 5.6k
R003 5.6k
M001 RF-500TB
(LOADING MOTOR)
C003 0.1
PH001 GP1S53
PHOTO SENSOR
SW001 MPU10371 MLBD (LD SW)
SW002 MPU10371 MLBD (REC SW)
CN003
CN002
H SW C. B
G MD MOTOR C.B


M801
(SPINDLE MOTOR)
1
2
3
4
M
M
M802
(SLED MOTOR)
(1/2)
TOR)
.B


F MD MAIN C.B (2/2)
IC802
UNBALANCE-BALANCE AMP
IC802 (1/4) NJM2112
IC802 (2/4) NJM2112
IC802 (3/4) NJM2112
IC802 (4/4) NJM2112
C801 22µ/6.3
C802 22µ/6.3
R831 47k
R832 47k
R803 12k
R804 12k
C803 56p
C804 56p
R805 10k
R806 10k
C805 22p
C806 22p
R807 22k
R808 22k
R801 47k
R802 47k
R809 1k
R810 1k
R811 1k
R812 1k
C809 10µ/6.3
C810 10µ/6.3
C811 10µ/6.3
C812 10µ/6.3
C807 820p
C808 820p
C817 0.1µ
C818 10µ/16
R825 4.7k
R826 4.7k
C819 100µ/4 TN
C820 0.1µ
GND
TO/FROM F MD MAIN C.B (1/2)
AD-L
AGND (IN)
AD-R
DA-L
AGND (OUT)
DA-R
IC803
DIFFERENTIAL AMP
IC803 (1/2) NJM2100M
IC803 (2/2) NJM2100M
C813 270p
C814 270p
R823 12k
R824 12k
R819 22k
R820 22k
R821 15k
R822 15k
R817 12k
R818 12k
C815 270p
C816 270p
C825 0.1µ
R829 4.7k
R830 4.7k
C824 0.1µ
C823 10µ/16
C826 220µ/4 TN
C837 2.2µ
C838 2.2µ
5V
AGND
D3.5V
DENF
DGND
DADT
XRSTO
ADDT
ABCK
ALRCK
F256
IC804 TK11230
VOLTAGE REGULATOR (AUDIO)
C834 1µ/50
R834 100k
C835 22µ/6.3
C836 0.01µ
L801 4.7µ
L802 4.7µ
C828 10µ/16
C830 10µ/16
C831 0.1µ
C832 0.1µ
C827 4.7µ/16
C840 (R833) 0.1
C833 0.1µ
C829 0.1µ
IC801 AK4520VF
D/A, A/D CONVERTER
1 VREFH
2 VREFL
3 AINR+
4 AINR-
5 AINL+
6 AINL-
7 VA
8 AGND
9 DIF0
10 DIF1
11 L/R
12 SCLK
13 SDTI
14 SDTO
28 VCOM
27 AOUTR
26 AOUTL
25 CMODE
24 PD-AD
23 PD-DA
22 DGND
21 VD
20 TEST1
19 TEST2
18 TEST3
17 DFS1
16 DFS0
15 MCLK
SIGNAL
ANALOG PB
ANALOG REC
DIGITAL PB
DIGITAL REC

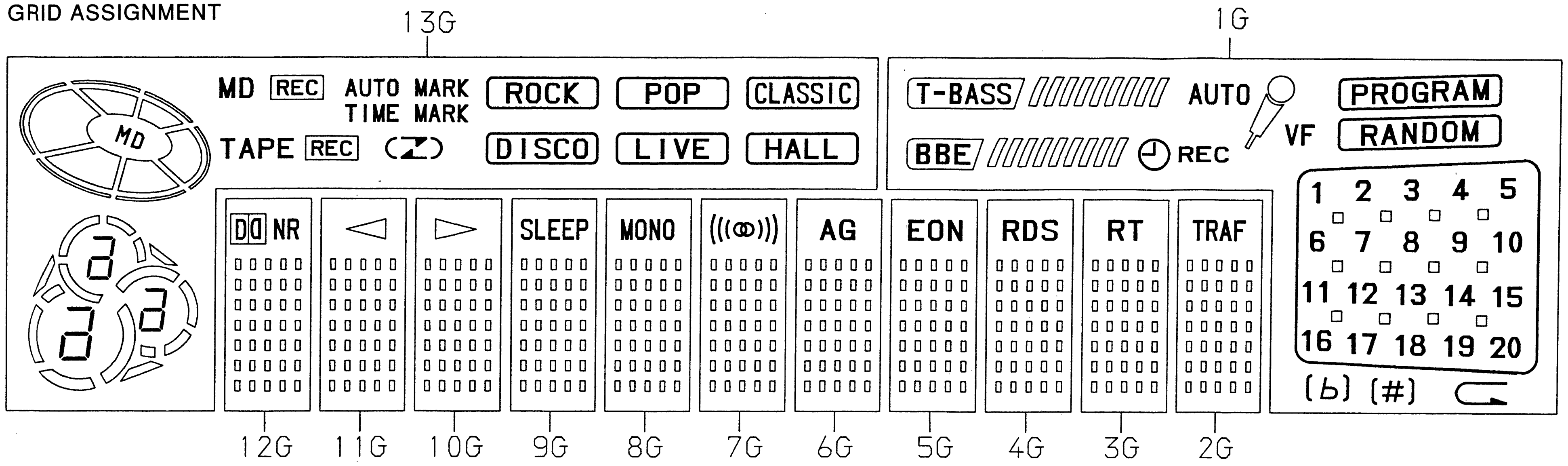
SCHEMATIC DIAGRAM-5 (MD POWER SECTION)



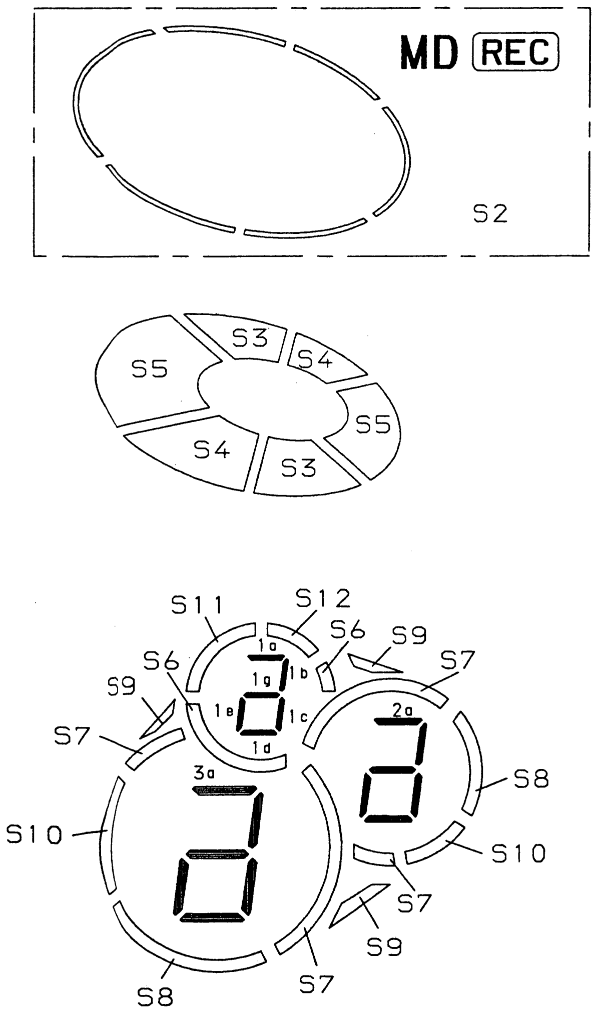
K MD POWER C.B
Q401 2SC2714 (Q0) LED DRIVE
R403 100
R401 100
C401 100/10
C402 0.1
MD DIGITAL OUT (OPTICAL)
LED401 SLZ-8128A -01-B
L203 BSS306-B102
C219 33/50
R241 18k
R243 3.3k
R244 3.3k
C220 33/50
R242 18k
L204 BSS306-B102
C214 4.7/50 ASF
C213 4.7/50 ASF
R229 100 1/8W
R225 100k
R226 100k
C217 0.01
C218 0.01
C215 10/50
C216 10/50
R223 10k
R219 10k
C205 150p
R221 10k
C207 1500p
C208 1500p
R222 10k
C206 150p
R224 10k
R220 10k
IC203 (1/2) NJM2068 MD LPF
IC203 (2/2) NJM2068 MD LPF
7.5
-7.5
C209 10/50 ASF
R231 4.7k
R233 100k
R234 100k
C210 10/50 ASF
R232 4.7k
IC204 (1/2) NJM2068 MD GAIN AMP
IC204 (2/2) NJM2068 MD GAIN AMP
R230 100 1/8W
R227 22k
C203 10/50 ASF
R215 1k
R217 10k
R218 10k
R228 22k
C204 10/50 ASF
R216 1k
Q205 2SD655 E LINE MUTING
Q206 2SD655 E LINE MUTING
Q209 DTC114YK (64) LINE MUTING
Q203 DTA114EK (14) LINE MUTING
R205 470
R206 470
L205 BSS306-B101
L206 BSS306-B101
GND
L101 1μH
L102 1μH
① D OUT
② D IN (CD OUT)
TO F MD MAIN C.B
CN106
① D-GND
② D-IN
TO 4Z0-1Z1MD CD C.B CON9
R308 470
C302 470p
R310 1k
CN104
① OUT-L
② OUT-R
③ A-GND
④ IN-R
⑤ IN-L
⑥ D-GND
TO A MAIN C.B CON603
CN101
⑭ 5V
⑬ D_GND
⑫ DRV_GND
⑪ N.C
⑩ N.C
⑨ D_GND
⑧ A_GND (OUT)
⑦ DA-L
⑥ DA-R
⑤ A_GND (IN)
④ AD-L
③ AD-R
② A_GND
① AMUTE
TO F MD MAIN C.B CON703
C131 0.01
C130 100/10
L103 1μH
Q121 2SC3052 F (LF) AC-OFF DETECTOR
Q123 2SC3052 F (LF) AC-OFF DETECTOR
D121 MC2838 (A6)
R122 39k 1/8W
R121 39k
R123 12k
R124 27k
C121 3.3μ/50
R133 4.7k
D111 1N4003
D112 1N4003
C111 4700/16
Q111 2SB1370 E VOLTAGE REGULATOR
R119 1.5 1/2W
R120 2.2 1/2W
R111 1k
Q115 2SC3052 F (LF)
R112 1k
C118 0.1
C113 100/10
C114 220μ/50
D113 HZS9A2 L
C112 47/16
Q112 2SB1370 E VOLTAGE REGULATOR
5
R114 47k
R116 6.8k
R117 100
D114 HZS4C2
C115 0.1
C116 1000/6.3
Q113 2SC3052 F (LF) VOLTAGE REGULATOR
Q114 2SC3052 F (LF) VOLTAGE REGULATOR
R115 4.7k
R118 150
Q115 VOLTAGE REGULATOR
CN105
TO H AC2 C.B CN001
D101 1N4003
D102 1N4003
D103 1N4003
D104 1N4003
C101 1000/16
C102 1000/16
Q101 2SA952 K VOLTAGE REGULATOR
7.5
R103 3.3k
C105 0.1
R101 1k
R105 4.7k
D107 MC2840 (A7)
Q103 2SC3052 F (LF) VOLTAGE REGULATOR
C107 220/16
C109 0.01
D105 MTZJ7.5B-72
C103 47/16
R107 1k
R108 1k
D106 MTZJ7.5B-72
C104 47/16
Q104 2SA1235 F (HF) VOLTAGE REGULATOR
R106 4.7k
D108 MC2840 (A7)
C108 220/16
C110 0.01
R102 1k
C106 0.1
R104 3.3k
-2.5
Q102 2SC2001 K VOLTAGE REGULATOR
CN102
① D-GND
② ACLK
③ SIN
④ SOUT
⑤ ARDY
⑥ MREQ
⑦ SREQ
⑧ AC-OFF
TO E MD MAIN C.B CON704
ACLK
SIN
ARDY
SREQ
R507 3.3k
R508 4.7k
R511 4.7k
R512 4.7k
R136 1k
R514 10k
R513 10k
R510 4.7k
R506 1k
SOUT
MREQ
C501 47/16
D501 HZS4A1
R504 10k
R503 10k
R505 100
R502 10k
R501 10k
Q504 2SC2714 (Q0) BUFFER
Q503 2SC2714 (Q0) BUFFER
Q502 DTC144EK (26) BUFFER
Q501 DTC144EK (26) BUFFER
CN103
① SOUT
② SIN
③ ACLK
④ ARDY
⑤ SREQ
⑥ MREQ
TO B FRONT C.B CON502
SIGNAL
:ANALOG PB
:ANALOG REC
:DIGITAL PB
:DIGITAL REC

FL (DISPLAY) 13-LT-22GK

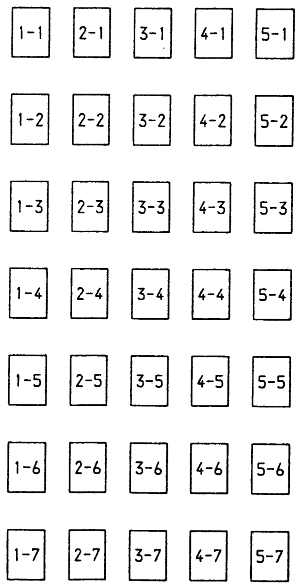
GRID ASSIGNMENT


13G
1G
MD REC AUTO MARK TIME MARK
TAPE REC
ROCK
POP
CLASSIC
DISCO
LIVE
HALL
T-BASS
AUTO
VF
BBE
REC
PROGRAM
RANDOM
DD NR
SLEEP
MONO
AG
EON
RDS
RT
TRAF
1 2 3 4 5
6 7 8 9 10
11 12 13 14 15
16 17 18 19 20
(♭) (#)
12G
11G
10G
9G
8G
7G
6G
5G
4G
3G
2G

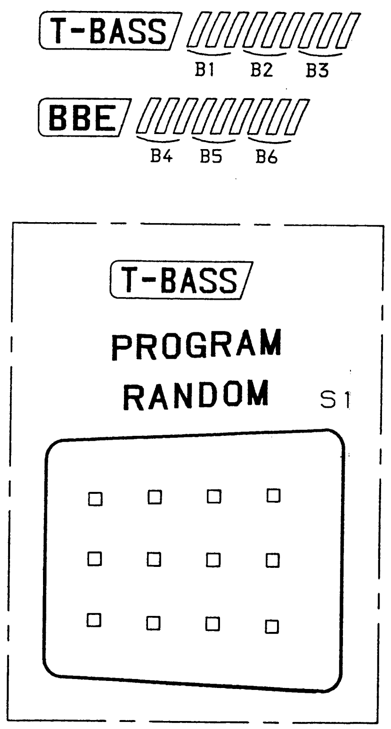
SEGMENT DESIGNATION


MD REC
S2
S3
S4
S5
S5
S4
S3
S11
S12
S6
S9
S7
S6
S9
S7
1a
1g
1b
1e
1c
1d
2a
3a
S8
S10
S10
S7
S9
S8
S7

[13G]


1-1
2-1
3-1
4-1
5-1
1-2
2-2
3-2
4-2
5-2
1-3
2-3
3-3
4-3
5-3
1-4
2-4
3-4
4-4
5-4
1-5
2-5
3-5
4-5
5-5
1-6
2-6
3-6
4-6
5-6
1-7
2-7
3-7
4-7
5-7

[12G~2G]


T-BASS
B1
B2
B3
BBE
B4
B5
B6
T-BASS
PROGRAM
RANDOM
S1

[1G]

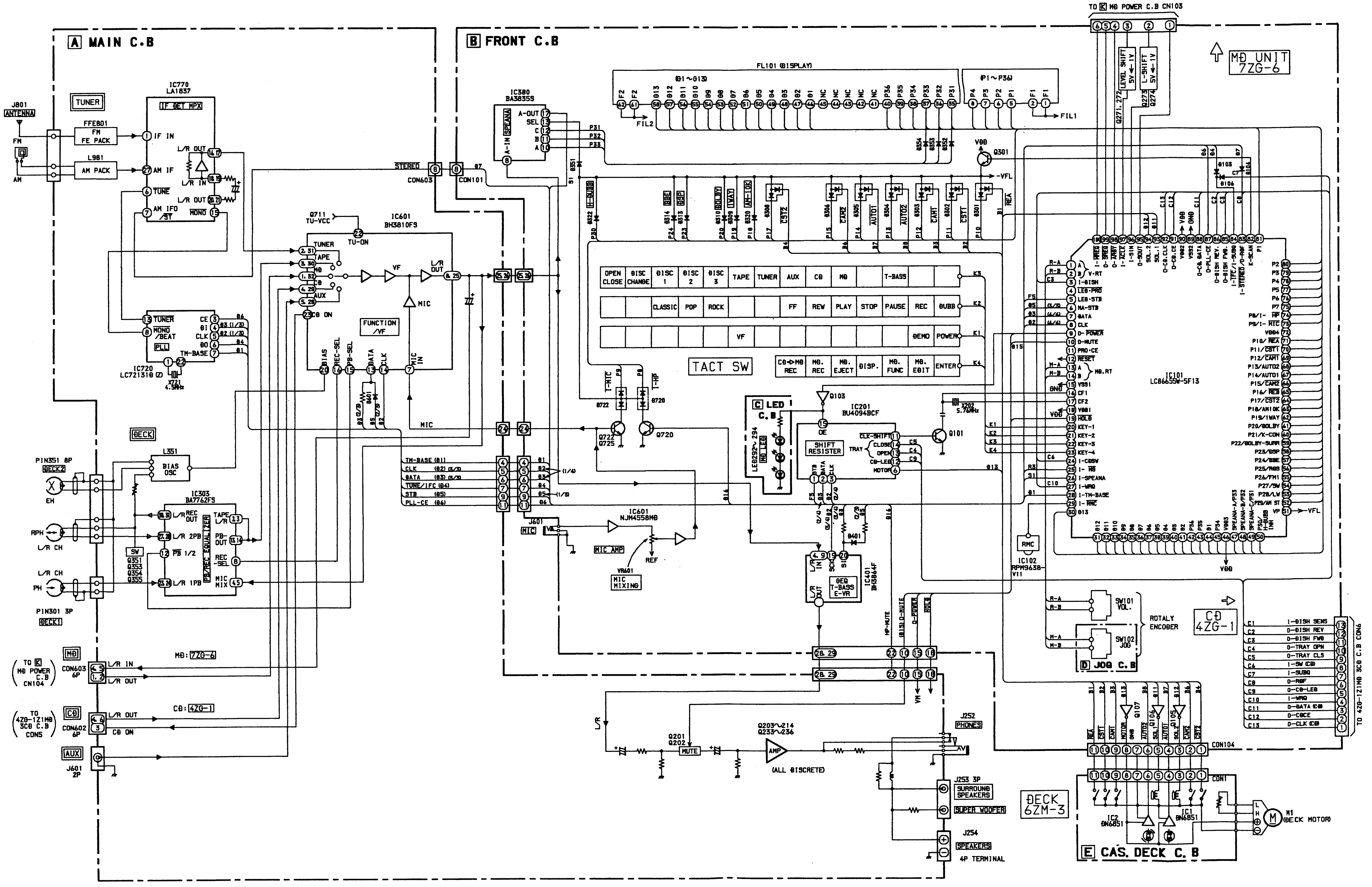
ANODE CONNECTION

	7G	6G	5G	4G	3G	2G	1G
P1	(((◎)))	AG	EON	RDS	RT	TRAF	B1
P2	1-1	1-1	1-1	1-1	1-1	1-1	B2
P3	2-1	2-1	2-1	2-1	2-1	2-1	B3
P4	3-1	3-1	3-1	3-1	3-1	3-1	B4
P5	4-1	4-1	4-1	4-1	4-1	4-1	B5
P6	5-1	5-1	5-1	5-1	5-1	5-1	B6
P7	1-2	1-2	1-2	1-2	1-2	1-2	AUTO
P8	2-2	2-2	2-2	2-2	2-2	2-2	VF
P9	3-2	3-2	3-2	3-2	3-2	3-2	◷
P10	4-2	4-2	4-2	4-2	4-2	4-2	REC
P11	5-2	5-2	5-2	5-2	5-2	5-2	PROGRAM
P12	1-3	1-3	1-3	1-3	1-3	1-3	RANDOM
P13	2-3	2-3	2-3	2-3	2-3	2-3	S1
P14	3-3	3-3	3-3	3-3	3-3	3-3	1
P15	4-3	4-3	4-3	4-3	4-3	4-3	2
P16	5-3	5-3	5-3	5-3	5-3	5-3	3
P17	1-4	1-4	1-4	1-4	1-4	1-4	4
P18	2-4	2-4	2-4	2-4	2-4	2-4	5
P19	3-4	3-4	3-4	3-4	3-4	3-4	6
P20	4-4	4-4	4-4	4-4	4-4	4-4	7
P21	5-4	5-4	5-4	5-4	5-4	5-4	8
P22	1-5	1-5	1-5	1-5	1-5	1-5	9
P23	2-5	2-5	2-5	2-5	2-5	2-5	10
P24	3-5	3-5	3-5	3-5	3-5	3-5	11
P25	4-5	4-5	4-5	4-5	4-5	4-5	12
P26	5-5	5-5	5-5	5-5	5-5	5-5	13
P27	1-6	1-6	1-6	1-6	1-6	1-6	14
P28	2-6	2-6	2-6	2-6	2-6	2-6	15
P29	3-6	3-6	3-6	3-6	3-6	3-6	16
P30	4-6	4-6	4-6	4-6	4-6	4-6	17
P31	5-6	5-6	5-6	5-6	5-6	5-6	18
P32	1-7	1-7	1-7	1-7	1-7	1-7	19
P33	2-7	2-7	2-7	2-7	2-7	2-7	20
P34	3-7	3-7	3-7	3-7	3-7	3-7	(♭)
P35	4-7	4-7	4-7	4-7	4-7	4-7	(#)
P36	5-7	5-7	5-7	5-7	5-7	5-7	↪
P37	-	-	-	-	-	-	-
P38	-	-	-	-	-	-	-
P39	-	-	-	-	-	-	BBE
P40	-	-	-	-	-	-	♭ #

ANODE CONNECTION

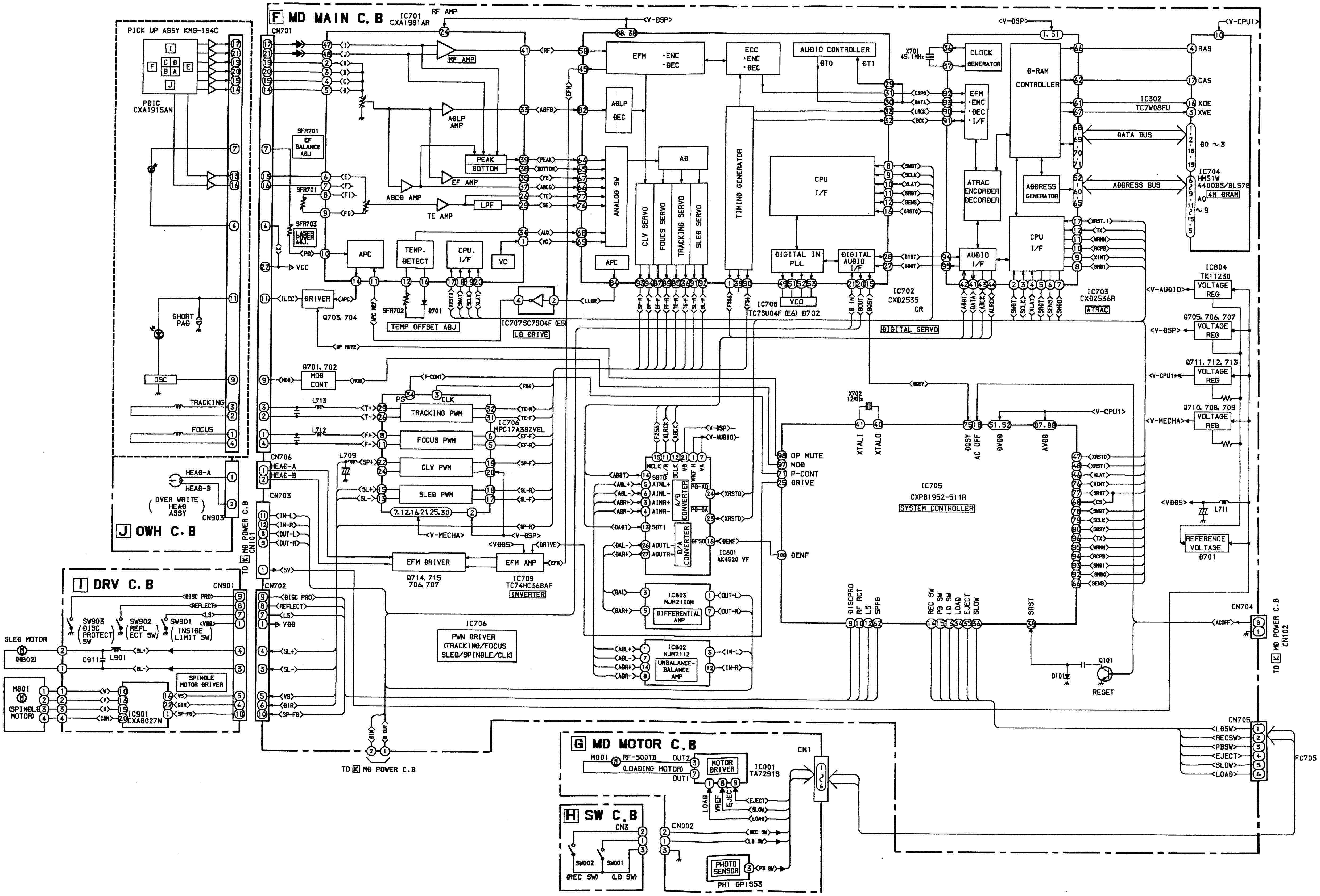
	13G	12G	11G	10G	9G	8G
P1	CLASSIC	DD NR	◁	▷	SLEEP	MONO
P2	POP	1-1	1-1	1-1	1-1	1-1
P3	ROCK	2-1	2-1	2-1	2-1	2-1
P4	DISCO	3-1	3-1	3-1	3-1	3-1
P5	LIVE	4-1	4-1	4-1	4-1	4-1
P6	HALL	5-1	5-1	5-1	5-1	5-1
P7	TIME MARK	1-2	1-2	1-2	1-2	1-2
P8	AUTO MARK	2-2	2-2	2-2	2-2	2-2
P9	ROCK POP CLASSIC	3-2	3-2	3-2	3-2	3-2
P10	(	4-2	4-2	4-2	4-2	4-2
P11	)	5-2	5-2	5-2	5-2	5-2
P12	TAPE REC	1-3	1-3	1-3	1-3	1-3
P13	S2	2-3	2-3	2-3	2-3	2-3
P14	S5	3-3	3-3	3-3	3-3	3-3
P15	S4	4-3	4-3	4-3	4-3	4-3
P16	S3	5-3	5-3	5-3	5-3	5-3
P17	MD	1-4	1-4	1-4	1-4	1-4
P18	S12	2-4	2-4	2-4	2-4	2-4
P19	S11	3-4	3-4	3-4	3-4	3-4
P20	1a, 1d, 1g	4-4	4-4	4-4	4-4	4-4
P21	1b	5-4	5-4	5-4	5-4	5-4
P22	1c	1-5	1-5	1-5	1-5	1-5
P23	1e	2-5	2-5	2-5	2-5	2-5
P24	S6	3-5	3-5	3-5	3-5	3-5
P25	S9	4-5	4-5	4-5	4-5	4-5
P26	S7	5-5	5-5	5-5	5-5	5-5
P27	2a, 2d, 2g	1-6	1-6	1-6	1-6	1-6
P28	2b	2-6	2-6	2-6	2-6	2-6
P29	2c	3-6	3-6	3-6	3-6	3-6
P30	2e	4-6	4-6	4-6	4-6	4-6
P31	3a, 3d, 3g	5-6	5-6	5-6	5-6	5-6
P32	3b	1-7	1-7	1-7	1-7	1-7
P33	3c	2-7	2-7	2-7	2-7	2-7
P34	3e	3-7	3-7	3-7	3-7	3-7
P35	S8	4-7	4-7	4-7	4-7	4-7
P36	S10	5-7	5-7	5-7	5-7	5-7
P37	(⇄)	-	-	-	-	-
P38	DISCO LIVE HALL	-	-	-	-	-
P39	-	-	-	-	-	-
P40	-	-	-	-	-	-

BLOCK DIAGRAM-1 (MAIN/FRONT SECTION)

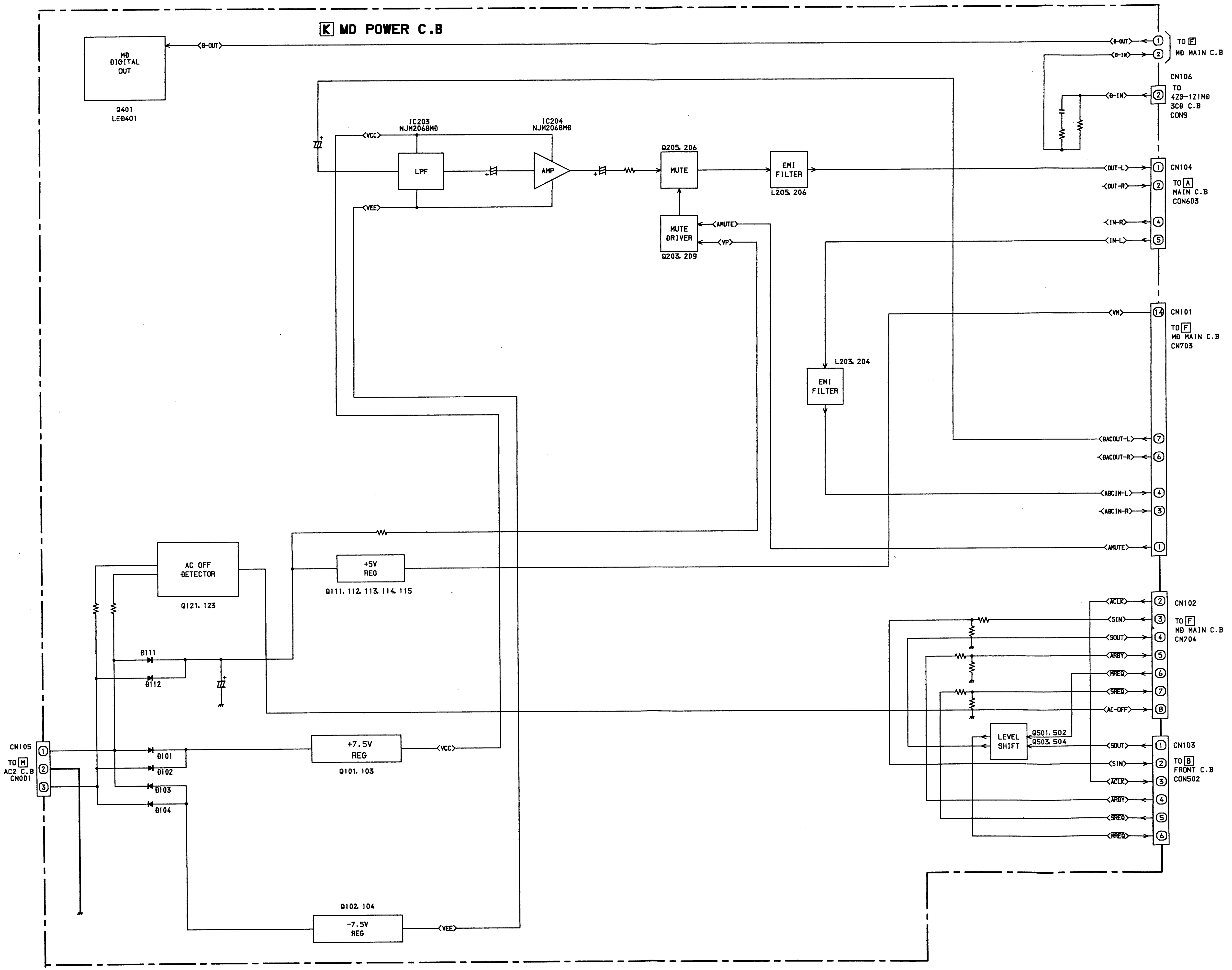


A MAIN C.B
B FRONT C.B
TO K MD POWER C.B CN103
MD UNIT 7ZG-6
J801 ANTENNA
FM
AM
TUNER
FFE801 FM FE PACK
L981 AM PACK
IC770 LA1837
IF DET MPX
IF IN
AM IF
TUNE
AM IFO /ST
L/R OUT
MONO
STEREO
CON603
CON101
IC720 LC72131D
TUNER
MONO /BEAT
PLL
TM-BASE
X721 4.5MHz
Q711 TU-VCC
TU-ON
IC601 BH3810FS
TUNER
TAPE
MD
CD
AUX
VF
L/R OUT
MIC
FUNCTION /VF
BIAS
REC-SEL
PB-SEL
DATA
CLK
MIC IN
DECK
L351
BIAS OSC
PIN351 8P DECK2
EH
RPH
L/R CH
PH
PIN301 3P DECK1
IC303 BA7762FS
REC OUT
L/R 2PB
PB 1/2
L/R 1PB
PB/REC EQUALIZER
TAPE L/R
PB-OUT
REC-SEL
MIC MIX
SW Q351 Q353 Q354 Q355
MD
TO K MD POWER C.B CN104
CON603 6P
L/R IN
L/R OUT
MD: 7ZG-6
CD
TO 4ZG-1Z1MD 3CD C.B CON5
CON602 6P
L/R OUT
CD ON
CD: 4ZG-1
AUX
J601 2P
IC380 BA3835S
SPEANA
A-OUT
SEL
A-IN
FL101 (DISPLAY)
(D1~D13)
(P1~P36)
FIL1
FIL2
VDD
Q301
-VFL
OPEN CLOSE
DISC CHANGE
DISC 1
DISC 2
DISC 3
TAPE
TUNER
AUX
CD
MD
T-BASS
CLASSIC
POP
ROCK
FF
REW
PLAY
STOP
PAUSE
REC
DUBB
VF
DEMO
POWER
TACT SW
CD⇔MD REC
MD. REC
MD. EJECT
DISP.
MD. FUNC
MD. EDIT
ENTER
K1 K2 K3 K4 K5
T-MIC
T-HP
Q722 Q725
Q720
TM-BASE (D1)
CLK (D2)
DATA (D3)
TUNE/IFC (D4)
STB (D5)
PLL-CE (D6)
J601 MIC
IC601 NJM4558MD
MIC AMP
REF
VR601 MIC MIXING
C LED C.B
LED292~294
MD LED
Q103
IC201 BU4094BCF
OE
SHIFT RESISTER
CLK-SHIFT
TRAY CLOSE OPEN
CD-LED
MOTOR
Q101
X202 5.76MHz
IC101 LC86655W-5F13
RMC
IC102 RPM9638-V11
VDD
IC401 BH3864F
DEQ T-BASS E-VR
HP-MUTE
(D15)D-MUTE
D-POWER
RDLW
SW101 VOL.
ROTALY ENCODER
SW102 JOG
D JOG C.B
CD 4ZG-1
I-DISH SENS
O-DISH REV
O-DISH FWD
O-TRAY OPN
O-TRAY CLS
I-SW (CD)
I-SUBQ
O-RWF
O-CD-LED
I-WRQ
O-DATA (CD)
O-CDCE
O-CLK (CD)
TO 4ZG-1Z1MD 3CD C.B CON6
Q201 Q202
MUTE
Q203~214 Q233~236
AMP
(ALL DISCRETE)
J252 PHONES
J253 3P SURROUND SPEAKERS
SUPER WOOFER
J254 SPEAKERS
4P TERMINAL
Q107
Q106
Q105
CON104
CON1
DECK 6ZM-3
IC2 BN6851
IC1 BN6851
M1 (DECK MOTOR)
E CAS. DECK C.B

BLOCK DIAGRAM-2 (MD MAIN SECTION)

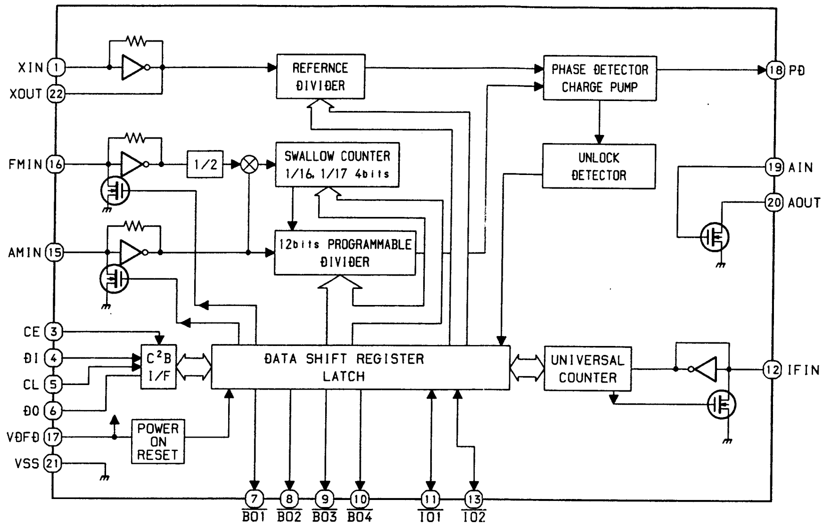

F MD MAIN C.B
IC701 CXA1981AR
RF AMP
PICK UP ASSY KMS-194C
PDIC CXA1915AN
CN701
ADIP AMP
EF BALANCE ADJ
SFR701
SFR703
LASER POWER ADJ.
ABCD AMP
EF AMP
TE AMP
LPF
PEAK
BOTTOM
APC
TEMP. DETECT
CPU. I/F
VC
DRIVER
Q703, 704
SFR702
D701
TEMP OFFSET ADJ
IC707 SC7S04F (E5)
LD DRIVE
SHORT PAD
OSC
TRACKING
FOCUS
Q701, 702
MOD CONT
L713
L712
L709
TRACKING PWM
FOCUS PWM
CLV PWM
SLED PWM
IC706 MPC17A38ZVEL
CN706
HEAD-A
HEAD-B
OVER WRITE HEAD ASSY
CN903
J OWH C.B
CN703
TO K MD POWER C.B CN101
EFM DRIVER
EFM AMP
Q714, 715 706, 707
IC709 TC74HC368AF
INVERTER
IC706
PWM DRIVER (TRACKING/FOCUS SLED/SPINDLE/CLK)
I DRV C.B
CN901
CN702
SW903 DISC PROTECT SW
SW902 REFLECT SW
SW901 INSIDE LIMIT SW
SLED MOTOR
M802
C911
L901
M801 SPINDLE MOTOR
IC901 CXA8027N
SPINDLE MOTOR DRIVER
TO K MD POWER C.B
EFM · ENC · DEC
ECC · ENC · DEC
AUDIO CONTROLLER
ADIP DEC
ANALOG SW
AD
CLV SERVO
FOCUS SERVO
TRACKING SERVO
SLED SERVO
TIMING GENERATOR
CPU I/F
DIGITAL IN PLL
DIGITAL AUDIO I/F
VCO
IC708 TC7SU04F (E6) D702
IC702 CXD2535 CR
DIGITAL SERVO
X701 45.1MHz
CLOCK GENERATOR
D-RAM CONTROLLER
EFM · ENC · DEC · I/F
ATRAC ENCORDER DECORDER
ADDRESS GENERATOR
AUDIO I/F
CPU I/F
IC703 CXD2536R
ATRAC
IC302 TC7W08FU
DATA BUS
ADDRESS BUS
RAS
CAS
XOE
XWE
D0 ~ 3
A0 ~ 9
IC704 HM51W 4400BS/BLS78
4M DRAM
IC804 TK11230
VOLTAGE REG
Q705, 706, 707
Q711, 712, 713
Q710, 708, 709
L711
REFERENCE VOLTAGE D701
X702 12MHz
XTALI
XTALO
OP MUTE
MOD
P-CONT
DRIVE
DENF
IC705 CXP81952-511R
SYSTEM CONTROLLER
IC801 AK4520 VF
A/D CONVERTER
D/A CONVERTER
IC803 NJM2100M
DIFFERENTIAL AMP
IC802 NJM2112
UNBALANCE-BALANCE AMP
DISCPRO
RF RCT
LS
SPFG
REC SW
PB SW
LD SW
LOAD
EJECT
SLOW
SRST
D101
Q101
RESET
CN704
TO K MD POWER C.B CN102
CN705
FC705
G MD MOTOR C.B
M001 RF-500TB (LOADING MOTOR)
MOTOR DRIVER
IC001 TA7291S
CN1
H SW C.B
CN3
SW002
SW001
(REC SW)
(LD SW)
CN002
PHOTO SENSOR
PH1 GP1S53

BLOCK DIAGRAM-3 (MD POWER SECTION)

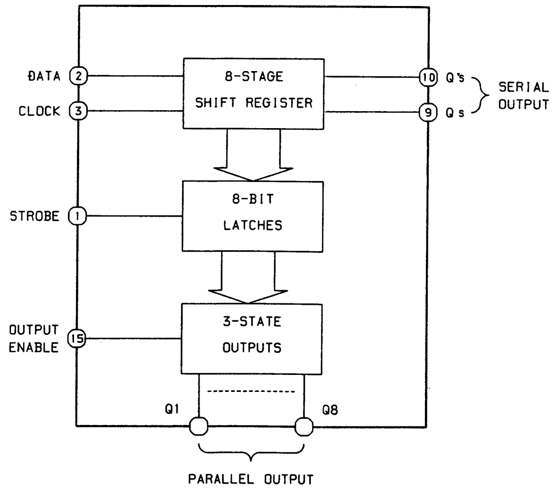

K MD POWER C.B
MD DIGITAL OUT
Q401
LED401
<D-OUT>
IC203
NJM2068MD
IC204
NJM2068MD
<VCC>
<VEE>
LPF
AMP
Q205, 206
MUTE
EMI FILTER
L205, 206
MUTE DRIVER
Q203, 209
<AMUTE>
<VP>
L203, 204
EMI FILTER
AC OFF DETECTOR
Q121, 123
+5V REG
Q111, 112, 113, 114, 115
D111
D112
D101
D102
D103
D104
+7.5V REG
Q101, 103
Q102, 104
-7.5V REG
<VCC>
<VEE>
CN105
TO M
AC2 C.B
CN001
① ② ③
<D-OUT> ①
<D-IN> ②
TO F
MD MAIN C.B
CN106
<D-IN> ②
TO
4ZG-1Z1MD
3CD C.B
CON9
CN104
<OUT-L> ①
<OUT-R> ②
<IN-R> ④
<IN-L> ⑤
TO A
MAIN C.B
CON603
CN101
<VM> ⑭
TO F
MD MAIN C.B
CN703
<BACOUT-L> ⑦
<BACOUT-R> ⑥
<ABCIN-L> ④
<ABCIN-R> ③
<AMUTE> ①
CN102
<ACLK> ②
<SIN> ③
<SOUT> ④
<ARDY> ⑤
<MREQ> ⑥
<SREQ> ⑦
<AC-OFF> ⑧
TO F
MD MAIN C.B
CN704
LEVEL SHIFT
Q501, 502
Q503, 504
CN103
<SOUT> ①
<SIN> ②
<ACLK> ③
<ARDY> ④
<SREQ> ⑤
<MREQ> ⑥
TO B
FRONT C.B
CON502

IC BLOCK DIAGRAM-1

IC, LC72131D


XIN 1
XOUT 22
FMIN 16
AMIN 15
CE 3
DI 4
CL 5
DO 6
VDFD 17
VSS 21
REFERNCE DIVIDER
PHASE DETECTOR CHARGE PUMP
18 PD
1/2
SWALLOW COUNTER 1/16, 1/17 4bits
UNLOCK DETECTOR
19 AIN
20 AOUT
12bits PROGRAMMABLE DIVIDER
C²B I/F
DATA SHIFT REGISTER LATCH
UNIVERSAL COUNTER
12 IFIN
POWER ON RESET
7 BO1
8 BO2
9 BO3
10 BO4
11 IO1
13 IO2

IC, BU4094BCF


DATA 2
CLOCK 3
STROBE 1
OUTPUT ENABLE 15
8-STAGE SHIFT REGISTER
8-BIT LATCHES
3-STATE OUTPUTS
10 Q's
9 Qs
SERIAL OUTPUT
Q1
Q8
PARALLEL OUTPUT

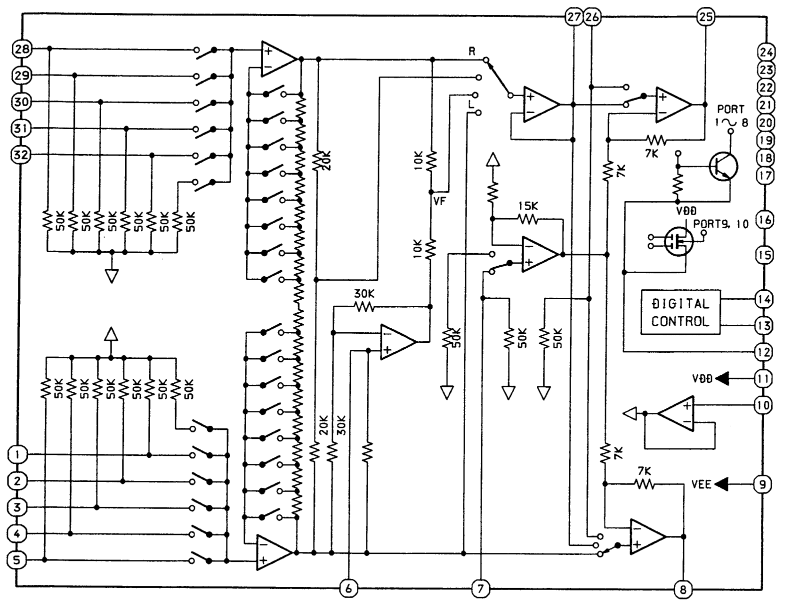
TRUTH TABLE

CLOCK	OUTPUT ENABLE	STROBE	DATA	PARALLEL OUTPUTS		SERIAL OUTPUTS	
				Q1	Qn	Qs	Q's
↑	L	X	X	Z	Z	Q7	NO Chg.
↓	L	X	X	Z	Z	No Chg.	Qs
↑	H	L	X	No Chg.	No Chg.	Q7	No Chg.
↑	H	H	L	L	Qn-1	Q7	No Chg.
↑	H	H	H	H	Qn-1	Q7	No Chg.
↓	H	X	X	No Chg.	No Chg.	No Chg.	Qs

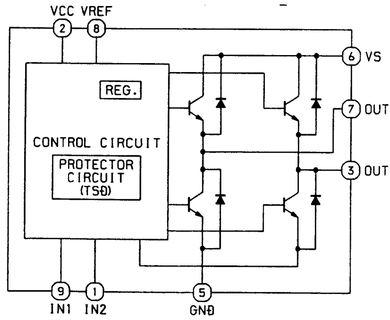
Z=High Impedance

X=Don't Care

IC, BM3810FS


28
29
30
31
32
1
2
3
4
5
6
7
8
27
26
25
24
23
22
21
20
19
18
17
16
15
14
13
12
11
10
9
R
L
50K
20K
30K
10K
VF
15K
7K
PORT 1 ~ 8
VDD
PORTS 10
DIGITAL CONTROL
VDD
VEE

IC, TA7291S


VCC VREF
2
8
6 VS
7 OUT1
3 OUT2
REG.
CONTROL CIRCUIT
PROTECTOR CIRCUIT (TSD)
9 IN1
1 IN2
5 GND

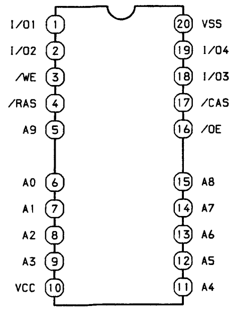
TRUTH TABLE

INPUT		OUTPUT		MODE
IN1	IN2	OUT1	OUT2	
0	0	∞	∞	STOP
1	0	H	L	CW/CCW
0	1	L	H	CCW/CW
1	1	L	L	BRAKE

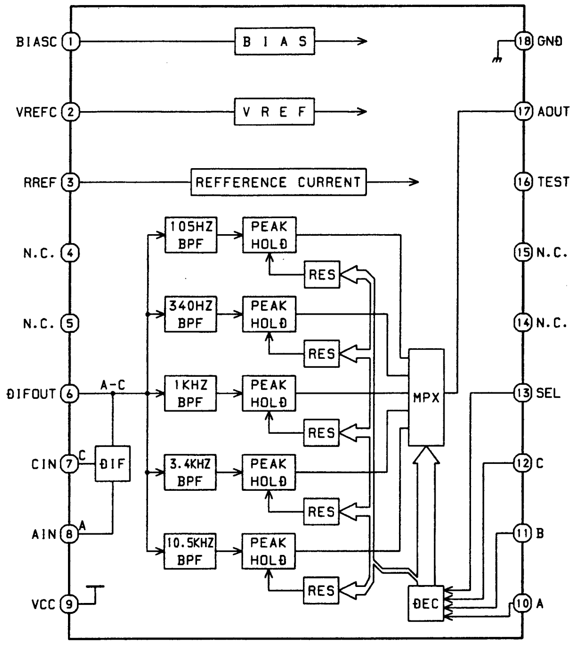
∞ :HIGH IMPEDACE
INPUT IS "H" ACITVE

IC, HM51W44001B5

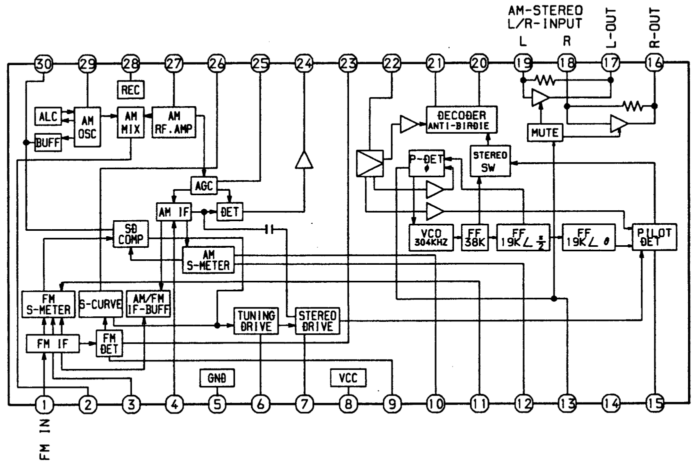
PIN NO.	SIGNAL		
	POW/ CLK	I	O
1		I/01	
2		I/02	
3	/WE		
4	/RAS		
5		A9	
6		A0	
7		A1	
8		A2	
9		A3	
10	VCC		
11		A4	
12		A5	
13		A6	
14		A7	
15		A8	
16	/OE		
17	/CAS		
18		I/03	
19		I/04	
20	VSS		


I/O1 1
I/O2 2
/WE 3
/RAS 4
A9 5
A0 6
A1 7
A2 8
A3 9
VCC 10
20 VSS
19 I/O4
18 I/O3
17 /CAS
16 /OE
15 A8
14 A7
13 A6
12 A5
11 A4

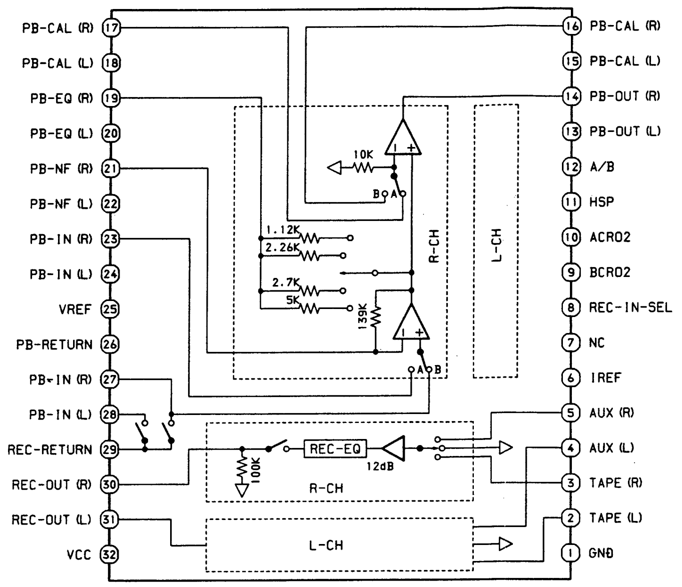
IC, BA3835S


BIASC 1
VREFC 2
RREF 3
N.C. 4
N.C. 5
DIFOUT 6
CIN 7
AIN 8
VCC 9
18 GND
17 AOUT
16 TEST
15 N.C.
14 N.C.
13 SEL
12 C
11 B
10 A
B I A S
V R E F
REFFERENCE CURRENT
105HZ BPF
340HZ BPF
1KHZ BPF
3.4KHZ BPF
10.5KHZ BPF
PEAK HOLD
RES
MPX
DEC
DIF
A-C
C
A

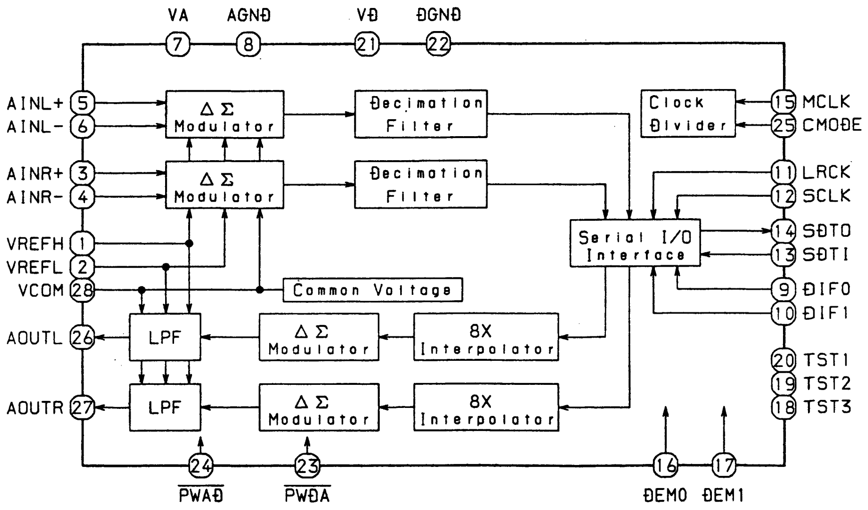
IC, LA1837


AM-STEREO L/R-INPUT
L
R
L-OUT
R-OUT
FM IN
REC
ALC
BUFF
AM OSC
AM MIX
AM RF.AMP
AGC
AM IF
DET
SD COMP
AM S-METER
FM S-METER
S-CURVE
AM/FM IF-BUFF
FM IF
FM DET
TUNING DRIVE
STEREO DRIVE
GND
VCC
DECODER ANTI-BIRDIE
MUTE
P-DET ϕ
STEREO SW
VCO 304KHZ
FF 38K
FF 19K∠ π/2
FF 19K∠ 0
PILOT DET
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15
30 29 28 27 26 25 24 23 22 21 20 19 18 17 16

IC, BA7762FS


PB-CAL (R) 17
PB-CAL (L) 18
PB-EQ (R) 19
PB-EQ (L) 20
PB-NF (R) 21
PB-NF (L) 22
PB-IN (R) 23
PB-IN (L) 24
VREF 25
PB-RETURN 26
PB-IN (R) 27
PB-IN (L) 28
REC-RETURN 29
REC-OUT (R) 30
REC-OUT (L) 31
VCC 32
16 PB-CAL (R)
15 PB-CAL (L)
14 PB-OUT (R)
13 PB-OUT (L)
12 A/B
11 HSP
10 ACRO2
9 BCRO2
8 REC-IN-SEL
7 NC
6 IREF
5 AUX (R)
4 AUX (L)
3 TAPE (R)
2 TAPE (L)
1 GND
10K
B A
1.12K
2.26K
2.7K
5K
139K
R-CH
L-CH
100K
REC-EQ
12dB

IC, AK4520-VF


VA 7
AGND 8
VD 21
DGND 22
AINL+ 5
AINL- 6
AINR+ 3
AINR- 4
VREFH 1
VREFL 2
VCOM 28
AOUTL 26
AOUTR 27
ΔΣ Modulator
Decimation Filter
Clock Divider
Serial I/O Interface
Common Voltage
LPF
8X Interpolator
15 MCLK
25 CMODE
11 LRCK
12 SCLK
14 SDTO
13 SDTI
9 DIF0
10 DIF1
20 TST1
19 TST2
18 TST3
24 PWAD
23 PWDA
16 DEM0
17 DEM1

IC DESCRIPTION-1

IC, LC866556W-5F13

Pin No.	Pin Name	I/O	Description
1	V.RT-A	I	Rotary encoder A input
2	V.RT-B	I	Rotary encoder B input
3	I-DISH	O	CD turntable photosensor
4	O-LED.PRO	O	PRO-LOGIC LED ON/OFF output
5	O-LED.STB	O	Strobe output for shift register
6	O-MA-STB	O	Strobe output for main microprocessor
7	O-DATA	O	Data output for FRONT, MAIN and PRO-LOGIC
8	O-CLK	O	Clock output for FRONT, MAIN and PRO-LOGIC
9	O-POWER	O	System power ON/OFF output
10	O-MUTE	O	System muting ON/OFF output
11	O-PRO-CE	O	Chip enable output for PRO-LOGIC
12	RESET	—	Reset terminal
13	I-MD.RT-A	I	Multi-jog, encoder A input
14	I-MD.RT-B	I	Multi-jog, encoder B input
15	VSS1	—	Connected to GND.
16	CF1	I	Microprocessor clock input
17	CF2	O	Microprocessor clock output
18	VDD1	—	VDD (back-up)
19	I-HOLD	I	Power failure detection A/D input
20	I-KEY-1	I	KEY-1 A/D input *1
21	I-KEY-2	I	KEY-2 A/D input *2
22	I-KEY-3	I	KEY-3 A/D input *3
23	I-KEY-4	I/O	KEY-4 A/D input (exclusively for MD) *1
24	I-CDSW	I/O	CD mechanism switch input
25	I-MS	I	Deck MS detection input
26	I-SPEANA	I	Spectrum analyzer level A/D input *2
27	I-WRQ	I	CD WRQ input
28	I-TM-BASE	I	Clock reference input (8Hz)
29	I-RMC	I	System remote control input
30	G13	O	FL grid output (13G)
31	G12	O	FL grid output (12G)
32	G11	O	FL grid output (11G)
33	G10	O	FL grid output (10G)
34	G9	O	FL grid output (9G)
35	G8	O	FL grid output (8G)
36	G7	O	FL grid output (7G)
37	G6	O	FL grid output (6G)
38	G5	O	FL grid output (5G)
39	G4	O	FL grid output (4G)
40	G3	O	FL grid output (3G)
41	G2	O	FL grid output (2G)
42	P36	O	FL segment output (P36)
43	P35	O	FL segment output (P35)
44	G1	O	FL grid output (1G)
45	P34	O	FL segment output (P34)
46	VDD3	—	VD (for FL)
47	P33/SPEANA-A	O	FL segment output (P33)/spectrum analyzer band switching output (A)
48	P32/SPEANA-B	O	FL segment output (P32)/spectrum analyzer band switching output (B)
49	P31/SPEANA-C	O	FL segment output (P31)/spectrum analyzer band switching output (C)
50	P30/H-DUBB INH	I/O	FL segment output (P30)/high-impedance inhibit diode input
51	VP	—	-VFL
52	P29/AM-ST	I/O	FL segment output (P29)/AM-STEREO responding diode input
53	P28/LW	I/O	FL segment output (P28)/LW responding diode input
54	P27/SW	I/O	FL segment output (P27)/SW responding diode input
55	P26/FM1	I/O	FL segment output (P26)/FM1 (OIRT) responding diode input
56	P25/RDS	I/O	FL segment output (P25)/RDS responding diode input
57	P24/BBE	I/O	FL segment output (P24)/non BBE diode input
58	P23/DSP	I/O	FL segment output (P23)/non DSP diode input
59	P22/DOLBY SURR	I/O	FL segment output (P22)/PRO-LOGIC responding diode input
60	P21/K-CON	I/O	FL segment output (P21)/K-CON responding diode input
61	P20/DOLBY	I/O	FL segment output (P20)/non DOLBY NR diode input
62	P19/1WAY	I/O	FL segment output (P19)/non DECK1 WAY&MS diode input
63	P18/AM-10K	I/O	FL segment output (P18)/AM10K diode input
64	P17/CST2	I/O	FL segment output (P17)/DECK2 cassette-in SW input
65	P16/REB	I/O	FL segment output (P16)/DECK2 side B recording enable SW input
66	P15/CAM2	I/O	FL segment output (P15)/DECK2 cam SW input
67	P14/AUTO1	I/O	FL segment output (P14)/DECK1 auto-stop input
68	P13/AUTO2	I/O	FL segment output (P13)/DECK2 auto-stop input
69	P12/CAM1	I/O	FL segment output (P12)/DECK1 cam SW input
70	P11/CST1	I/O	FL segment output (P11)/DECK1 cassette-in SW input
71	P10/REA	I/O	FL segment output (P10)/DECK2 side A recording enable SW input
72	VDD4	—	VDD (for FL)
73	P9/I-MIC	I/O	FL segment output (P9)/auto vocal fading MIC A/D input
74	P8/I-HP	I/O	FL segment output (P8)/headphone insertion detection input
75	P7	O	FL segment output (P7)
76	P6	O	FL segment output (P6)
77	P5	O	FL segment output (P5)
78	P4	O	FL segment output (P4)
79	P3	O	FL segment output (P3)
80	P2	O	FL segment output (P2)
81	P1	O	FL segment output (P1)
82	O-K-SCAN	I	Segment input enable input

Pin No.	Pin Name	I/O	Description
83	I-STEREO/O-RDF	I/O	TUNER stereo detection input/CD RDF output
84	I-IFC/1-SUBQ	I/O	TUNE IF count input/CD SUBQ output
85	O-DISH FWD.	O	CD turntable forward drive output
86	O-DISH REV.	O	CD turntable reverse drive output
87	O-PLL-CE	O	Chip enable output for TUNER PLL
88	O-CD.DATA	O	CD DATA output
89	VSS2	—	GND
90	VDD2	—	VDD (back-up)
91	O-CD.CE	O	CD CE output
92	O-CD.CLK	O	CD CLK output
93	O-$\overline{\text{SOL.1}}$	O	DECK1 plunger ON/OFF output
94	O-$\overline{\text{SOL.2}}$	O	DECK2 plunger ON/OFF output
95	O-SOUT	O	MD SOUT output
96	I-SIN	I	MD SIN input
97	I-$\overline{\text{ACLK}}$	I	MD ACLK input (active "L")
98	O-$\overline{\text{ARDY}}$	O	MD ARDY output (active "L")
99	O-$\overline{\text{SREQ}}$	O	MD SREQ output (active "L")
100	I-$\overline{\text{MREQ}}$	I	MD MREQ input (active "L")

*1

Key1 AD input	Key2 AD input	Key3 AD input	Key4 AD input
OFF	OFF	OFF	OFF
OFF	OFF	OFF	OFF
AG	MIC-VOL SEL	OPEN/ CLOSE	OFF
PTY	ECHO-VOL SEL	DISC CHANGE	OFF
RT	CLASSIC	DISC1	OFF
KC UP	POP	DISC2	OFF
KC DOWN	ROCK	DISC3	OFF
VF	GEQ	TAPE	OFF
HALL	DSP	TUNER	OFF
LIVE	FF	AUX	CD>MD REC
DISCO	REW	CD	MD.REC
EDIT	PLAY	MD	MD.EJECT
REV MODE	STOP	BBE	DISP
DOLBY	PAUSE	T-BASS	MD.FUNC
DEMO	REC	P-LOGICM	MD.EDIT
POWER	DUBB	PBC	ENTER

*2

Spectrum analyzer indicator level		
		5.60V
Lights up to level 6	(0dB)	
		3.34V
Lights up to level 5	(-4.5dB)	
		1.99V
Lights up to level 4	(-9.0dB)	
		1.18V
Lights up to level 3	(-13.5dB)	
		0.71V
Lights up to level 2	(-18.0dB)	
		0.42V
Lights up to level 1	(-22.5dB)	
		0.25V
Off	(-27.0dB)	

IC, CXA1981Q/AR

Pin No.	Pin Name	I/O	Description
1	VC	O	Vcc/2 voltage output.
2	A	I	Main beam servo signal A, current input.
3	B	I	Main beam servo signal B, current input.
4	C	I	Main beam servo signal C, current input.
5	D	I	Main beam servo signal D, current input.
6	E	I	Main beam servo signal E, current input.
7	F	I	Main beam servo signal F, current input.
8	FI	I	EF balance adjustment.
9	FO	O	EF balance adjustment.
10	PD	I	Amount of light, monitoring signal input.
11	APCREF	I	Reference voltage input for laser power setting.
12	TEMPI	I	External temperature sensor is connected to this terminal.
13	GND	—	GND.
14	AAPC	O	APC output.
15	TST0	O	Test terminal. Open.
16	TEMPR	O	External temperature sensor is connected to this terminal. Reference voltage is output.
17	TST1	I	Test terminal. Connected to Vcc.
18	SWDT	I	Microprocessor serial interface, data input.
19	SCLK	I	Microprocessor serial interface, shift clock input.
20	XLAT	I	Microprocessor serial interface, latch input. Latch at "L".
21	VREF	O	Reference voltage output.
22	TST2	O	Test terminal. Open.
23	TST3	—	Test terminal. Open.
24	VCC	—	Power supply terminal.
25	TST4	I	Test terminal. Connected to Vcc.
26	TE	O	Tracking error output.
27	TLB	—	External capacitor for low-boosting the tracking error signal, is connected to this terminal.
28	CSLED	—	External capacitor of low-pass capacitor for the sled error signal, is connected to this terminal.
29	SE	O	Sled error signal output.
30	ADFM	O	ADIP FM signal output.
31	ADIN	I	ADIP signal comparator input.
32	ADAGC	—	External capacitor for ADIP AGC is connected to this terminal.
33	ADFG	O	ADIP 2 binary signal output.
34	AUX	O	I3 output/temperature signal output. The two signals are selected by the serial command.
35	FE	O	Focus error signal output.
36	FLB	—	External capacitor for low-boosting the focus error signal, is connected to this terminal.
37	ABCD	O	Light amount signal output from the main beam servo detector.
38	BOTM	O	RF/ABCD bottom hold signal output.

Pin No.	Pin Name	I/O	Description
39	PEAK	O	RF/ABCD peak hold signal output.
40	RFAGC	—	External capacitor for RF AGC is connected to this terminal.
41	RF	O	RF equalizer output.
42	ISET	—	BPF (fo = 702 kHz, 22 kHz) and RF equalizer setting.
43	AGCI	I	RF AGC input.
44	RFO	O	RF amplifier output. Eye pattern check point.
45	MORFI	I	The input signal in which the RF signal from groove and the RF signal are mixed.
46	MORFO	O	RF signal (I-J) output from groove.
47	I	I	I-V converted RF signal I input.
48	J	I	I-V converted RF signal J input.

IC, CXP81952-511R

Pin No.	Pin Name	I/O	Description
1 ~ 8	NC	—	Unused
9	DISCPRO	I	DISC PROTECT SW input
10	RFLCT	I	DISC REFLECT SW input
11	B-CAS	O	DRAM self-refresh control output
12	LS	I	Pick-up innermost SW input
13	NC	—	Unused
14	REC SW	I	Loading control: REC SW input
15	PB SW	I	Loading control: PB SW input
16	LD SW	I	Loading control: LOAD SW input
17	NC	—	Unused
18	ACOFF	I	Power failure detection input
19	SREQ	I	Serial interface: Sub-interrupt request signal
20	START	I	HOST starts when receiving START from sub-CPU.
21	B-RAS	O	DRAM self-refresh control
22, 23	NC	—	Unused
24	MREQ	O	Serial interface: Main interrupt request signal
25	DRIVE	O	Recording current control. "L" during recording
26 ~ 28	NC	—	Unused
29	DAPON	O	DA converter ON/OFF control. H: ON
30	DMUTE	—	Unused. Open drain
31	REC	O	Recording circuit power ON/OFF control. H: ON open drain
32	AMUTE	O	Analog muting. H: MUTE
33	NC	—	Unused
34	LOAD	O	Loading control: Motor output 1
35	EJECT	O	Loading control: Motor output 2
36	SLOW	O	Loading control: Motor speed SLOW output
37	MP	I	Connected to GND.
38	SRST	I	Reset terminal
39	DGND	—	Connected to GND.
40	XTAL0	I	For the connection of a 12MHz ceramic oscillator
41	XTAL1	I	For the connection of a 12MHz ceramic oscillator
42	ARDY	I	Serial interface: Ready signal
43	SIN	I	Serial interface: SI signal
44	SOUT	O	Serial interface: SO signal
45	ACLK	O	Serial interface: Clock signal
46	XLAT	O	Serial data strobe output
47	XRST0	O	Reset signal for CXD2533BR/CXA1981. Reset at "L"
48	XRST1	O	Reset signal for CXD2356. Reset at "L"
49	NC	—	Unused
50	AVSS	—	Connected to GND.
51	AVREF	—	Connected to power supply.

Pin No.	Pin Name	I/O	Description
52	AVDD	—	Connected to power supply.
53 ~ 56	NC	—	Unused (pulled up)
57 ~ 59	NC	—	Unused (connected to GND)
60	NC	—	Unused (pulled up)
61	COUT	I	Track jump count input
62	SP-FG	I	Spindle FG input
63	SHCK	I	Shock detection input
64	FOK	I	FOK input. H: FOCUS ON
65	GFS	I	Guard frame sync input. H: Frame sync OK
66	SENS	I	CXD2535 internal status monitor input
67	NC	—	Unused (connected to GND)
68	CS	I	Serial data strobe input
69	NC	—	Unused
70	EXTVCO	O	VCO ON/OFF control. L: ON
71	P-CONT	O	DSP power control. L: Turns off power for DSP/RF/MOTOR.
72	RFSW	—	Unused
73, 74	NC	—	Unused
75	DQSY	I	Digital recording sub-Q sync input
76	XINT	I	Interrupt request input from CXD2536R. L: Interrupt
77	SRDT	I	CXD2536R serial data
78	SWDT	O	CXD2536R/CXA1984A serial data
79	SCLK	O	SRDT/SWDT serial clock
80	SQSY	O	EFM subcode Q sync/ADIP sync
81 ~ 83	NC	—	Unused
84	NC	—	Unused (the clock is not supported). Connected to GND.
85	NC	—	Unused (the clock is not supported).
86	VSS	—	Connected to GND.
87, 88	VDD	—	Connected to power supply.
89	SHCZKEN	O	Shock detection request output
90	WRPWR	O	Laser power control output to CXD2535BR. H: Recording power
91	DIRC	O	Track jump control
92, 93	SMD0, SMD1	O	CXD2536R serial data control mode
94	RCPB	O	CXD2536R recording/playback control. H: Record mode
95	WRMN	O	ATRAC encoding and external RAM write control
96	TX	O	CXD2536R recording data enable control. H: Enable
97	MOD	O	Laser diode high-frequency superimposing control
98	OPMUTE	O	Laser diode control. H: ON
99	ADPON	O	AC converter power control. H: ON
100	EMPH	O	AC converter emphasis control. H: ON

IC, CXD2535CR

Pin No.	Pin Name	I/O	Description
1	FS256	O	256 Fs output. (11.2896 MHz)
2	FOK	O	Focus OK signal output. Focus OK at "H".
3	DFCT	O	Defect sense output. Defect at "H".
4	SHCK	O	Track jump sense output.
5	SHCKEN	I	Track jump sense enable input. Enable at "H".
6	WRPWR	I	Laser power switching input. Laser record power at "H". Laser playback power at "L".
7	DIRC	I	Track jump control signal.
8	SWDT	I	Microprocessor serial interface data input.
9	SCLK	I	Microprocessor serial interface shift clock input.
10	XLAT	I	Microprocessor serial interface latch input. Latch at fall-down.
11	SRDT	O	Microprocessor serial interface data output.
12	SENS	O	Internal status is output corresponding to microprocessor serial interface address.
13	ADSY	O	ADIP sync output
14	SQSY	O	Disc sub-code Q sync/ADIP sync output.
15	DQSY	O	U-bit CD or subcode Q sync output of the MD format is output when the source of the DIGITAL IN is CD or MD.
16	XRST	I	Reset input. Reset at "L".
17	TEST4	I	Test terminal. Connect to GND.
18	CLVSCK	O	Clock output for spindle servo evaluation. (5.6448 MHz).
19	TEST5	I	Test terminal. Connect to GND.
20	DOUT	O	Digital audio interface signal output.
21	DIN	I	Digital audio interface signal input.
22	FMCK	O	ADIP FM demodulation clock output.
23	ATER	O	ADIP CRC flag output. Error at "H".
24	REC	I	Switching between record and playback. Record at "H". Playback at "L".
25	DVSS	I	Digital GND.
26	DOVF	I	V-bit input of the signal to be output from the DOUT terminal.
27	DODT	I	Signal to be output from the DOUT terminal and audio data input for peak level detection.
28	DIDT	O	Audio data output of the signal which is input from the DIN terminal.
29	DTI	I	Record data input from CXD2536A.
30	DTO	O	Playback data output to CXD2536A during playback. "Z" during recording.
31	C2PO	O	C2 pointer of the playback data is output during playback. V-bit of the DIGITAL IN is output during digital recording. Analog recording at "L".
32	BCK	O	64 Fs output. (2.8224 MHz).
33	LRCK	O	Fs output (44.1 kHz).
34	XTAO	O	Crystal oscillator circuit output terminal. (Inverted output of the X'TAL terminal).
35	XTAI	I	Crystal oscillator circuit input terminal. (512 Fs = 22.5792 MHz).
36	MCLK	O	Master clock output. (512 Fs = 22.5792 MHz).
37	XBCK	O	BCK inverted output.

Pin No.	Pin Name	I/O	Description
38	DVDD	—	Digital power supply.
39	WDCK	O	2 Fs output. (88.2 kHz).
40	RFCK	O	Read frame clock output. (Fs/6).
41	WFCK	O	Write frame clock output.
42	GTOP	O	Monitoring the operating status of the frame sync protection window. Frame sync protection window is open at “H”.
43	GFS	O	Frame sync OK at “H”.
44	XPLCK	O	PLL clock output of the EFM decoder. (98 Fs = 4.3218 MHz).
45	EFMO	O	“L” output during playback. EFM (encode data) output during recording.
46	RAOF	O	RAM overflow output during playback.
47	MVCI	I	Clock input of the externally connected VCO for DIGITAL IN PLL.
48	TEST2	I	Test terminal. Connect to GND.
49	DIPD	O	DIGITAL IN PLL phase comparator output.
50	DVSS	—	Digital GND.
51	DICV	I	Voltage input to control the internal VCO for DIGITAL IN PLL.
52	DIFI	I	Input to filter when the internal VCO for DIGITAL IN PLL is used.
53	DIFO	O	Filter input when the internal VCO for DIGITAL IN PLL is used.
54	AVDD	—	Analog GND.
55	ASYO	O	Playback EFM full swing output. (“L” = Vss, “H” = VDD).
56	ASYI	I	Playback EFM comparator slice voltage input.
57	BIAS	I	Playback comparator bias current input.
58	RFI	I	Playback EFM RF signal input/.
59	AVSS	—	Analog GND.
60	CLTV	I	Master PLL for playback digital PLL and also input control voltage to internal VCO for recording EFM PLL.
61	PCO	O	Master PLL for playback digital PLL and also phase comparator output to recording EFM PLL.
62	FILI	I	Master PLL for playback digital PLL and also filter input to recording EFM PLL.
63	FILO	O	Master PLL for playback digital PLL and also filter output to recording EFM PLL.
64	PEAK	I	Peak-hold signal input of laser light.
65	BOTM	I	Bottom-hold signal input of laser light.
66	ABCD	I	Laser light amount input signal.
67	FE	I	Focus error signal input.
68	AUX1	I	Auxiliary input-1.
69	VC	I	Center voltage input.
70	ADIO	O	Monitor output of the A/D converter input signal.
71	TEST3	I	Test terminal. Connect to GND.
72	AVDD	—	Analog GND.
73	ADRT	I	Input voltage indicating upper limit of A/D converter operation range.
74	ADRB	I	Input voltage indicating lower limit of A/D converter operation range.
75	AVSS	—	Analog GND.

Pin No.	Pin Name	I/O	Description
76	SE	I	Sled error signal input.
77	TE	I	Tracking error signal input.
78	AUX2	I	Auxiliary input-2.
79	DCHG	I	Connect to GND.
80	TEST6	I	Test terminal. Connect to GND.
81	TEST1	I	Test terminal. Connect to GND.
82	ADFG	I	ADIP binary FM signal (22.05 ±1 kHz) input.
83	TS25	I	Test terminal. Connect to GND.
84	LDDR	O	Laser drive output.
85	TRDR	O	Tracking servo drive output (–).
86	TFDR	O	Tracking servo drive output (+).
87	FFDR	O	Focus servo drive output (+).
88	DVDD	—	Digital power supply.
89	FRDR	O	Focus servo drive output (–).
90	FS4	O	4 Fs output. (1764 kHz).
91	SRDR	O	Slid servo drive output (–).
92	SFDR	O	Slid servo drive output (+).
93	SPRD	O	Spindle servo drive output (–).
94	SPFD	O	Spindle servo drive output (+).
95	DCLO	O	Serial data output for spindle servo evaluation.
96	DCLI	I	Serial data input for spindle servo evaluation.
97	XDCL	O	Serial data load signal output for spindle servo evaluation.
98	OFTRK	O	OFF-track signal output. OFF-track at “H”.
99	COUT	O	Track jump count signal output.
100	DVSS	—	Digital GND.

IC, CXD2536CR

Pin No.	Pin Name	I/O	Description
1	VDD	—	Power supply terminal.
2	SWDT	I	Microprocessor serial interface, data input.
3	SCLK	I	Microprocessor serial interface, shift clock input.
4	XLAT	I	Microprocessor serial interface, latch input. Latched at fall down.
5	SRDT	O	Microprocessor serial interface, data output.
6	SENS	O	Internal status output corresponding to the address of microprocessor serial interface.
7, 8	SMD0, SMD1	I	Serial command, command mode.
9	XINT	O	Interrupt request output terminal. "L" when interrupt status occurs.
10	RCPB	I	"H" at record mode, "L" at playback mode.
11	WRMN	I	"H" at write mode, "L" at monitor mode.
12	TX	I	Enable signal input terminal of the recording data output. Enable at "H".
13	VSS	—	GND.
14~16	TST0~TST2	I	Test terminal. Connect this pin to GND.
17	XRST	I	Reset input. Reset at "L".
18~21	TS0~TS3	I	Test terminal. Connect this pin to GND.
22~24	TST3~TST5	I	
25	VSS	—	GND.
26	AIRCPB	O	ATRAC block record/playback mode output. Record mode at "H". Playback mode at "L".
27~35	TST6~TST14	O	Test terminal. Leave this pin to open.
36	OSCO	O	Crystal oscillator circuit output terminal. (Inverted output of the OSC1 terminal).
37	OSCI	I	Crystal oscillator circuit input terminal. (1024 Fs).
38	VSS	—	GND.
39, 40	TST15, TST16	O	Test terminal. Leave this pin to open.
41	DOUT	O	Record monitor output/decoded audio data output.
42	ADIN	I	Analog record input terminal. (External A/D converter output is connected to this terminal.)
43	ABCK	O	XBCK (64 Fs) output terminal to external audio block.
44	ALRCK	O	LRCK (Fs) output terminal to external audio block.
45~47	SA2~SA0	O	SRAM address bus.
48, 49	A11, A10	O	RAM address bus.
50	VSS	—	GND.
51	VDD	—	Power supply terminal.
52~55	A03~A00	O	RAM address bus.
56~60	A04~A08	O	
61	XOE	O	RAM output enable.
62	XCAS	O	RAM $\overline{CAS}$ output.
63	VSS	O	GND.
64	XCS	O	RAM chip select. DRAM at "H". SRAM at "L".
65	A09	O	RAM address bus.
66	XRAS	O	RAM $\overline{RAS}$ output.

Pin No.	Pin Name	I/O	Description
67	XWE	O	RAM write enable.
68, 69	D1, D0	I/O	RAM data bus.
70~74	D2~D6	I/O	
75	VSS	—	GND.
76	D7	I/O	RAM data bus.
77	ERR	I/O	Data input/output terminal for C2PO exclusive RAM.
78	EXTC2R	I	Selector of C2PO exclusive RAM. "H" to use. "L" not to use.
79	BUSY	O	Busy output of RAM access. RAM access at "H".
80	EMP	O	The signal output indicating immediately before empty or full of the ATRAC data.
81	FUL	O	The signal output indicating immediately before full or empty of the ATRAC data.
82	EQL	O	ATRAC data empty. ("H" when ASC = DSC).
83	MDLK	O	Indicating main/sub of the record/playback data. Sub or linking at "H". Main at "L".
84	CPSY	O	Sync input to be inserted internally.
85, 86	CTMD1, CTMD0	O	Internal counter mode output.
87	SPO	O	512 Fs output.
88	VSS	—	GND.
89	MDSY	O	Sync detection output of the main data.
90	LRCK	I	LRCK (Fs) input terminal from the EFM encoder/decoder.
91	BCK	I	BCK (46 Fs) input terminal from the EFM encoder/decoder.
92	C2PO	I	C2PO input terminal from the EFM encoder/decoder.
93	DATA	I/O	Data input/output terminal from the EFM encoder/decoder.
94	DIDT	I	Digital recording input terminal.
95	DODT	O	Record monitor output/decode audio data output.
96	DIRCPB	O	Record/playback mode output to the EFM encoder/decoder. Record mode at "H". Playback mode at "L".
97	MIN	I	External monitor signal input terminal.
98	TST17	I	Test terminal. Connect this pin to VDD.
99	TST18	O	Test terminal. Leave this pin to open.
100	VSS	O	GND.

CD TEST MODE

1. Starting the CD Test Mode

While holding down the CD function button, plug the power cord into an AC outlet. CD TEST will appear in the FL display, and the test mode will start.

2. Releasing the CD Test Mode

Perform one of the following operations:

- Press a function button other than CD.
- Press the power SW button.
- Unplug the power cord.

3. Description of Functions in CD Test Mode

After starting the test mode, press each operation button, and the following check can be done:

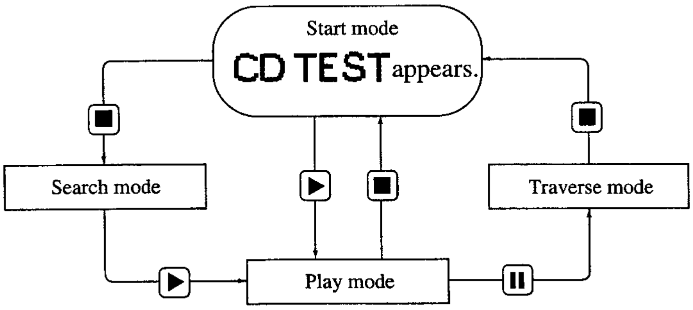
Mode	Action	FL display	Operation	Details
Start mode (Sled mode)	Start	CD TEST	· TEST MODE started.	· CD TEST MODE
	⏮ ⏭ buttons		· Pickup moves to outer circumference. · Pickup moves to inner circumference. *1 (Normal operation during CD play)	· SLED SERVO · SLED operation checked.
Search mode	■ button	CD	· Laser diode always emits light (CD block power ON) · Continuous focus search *2 (PU lens repeats full swing) · Spindle motor continues kick rotation.	· APC circuit checked. · Laser current measured. FOCUS SERVO · Focus search waveform checked · Focus error waveform checked (FOK/FZC is not monitored in the search mode)
Play mode	▶ button	CD 1 Tr	· Normal play · If TOC READ is not possible: Focus search continues. *2 · Spindle motor continues kick rotation.	· FOCUS SERVO/TRACKING SERVO · CLV SERVO/SLED SERVO · FOK (DRF) checked
Traverse mode	⏸ button	CD 1 Tr		· TRACKING SERVO OFF · Tracking balance (radial balance)

*1: While the "⏮" or "⏭" button is held down, the sled motor will be driven even if the pickup is on the innermost or outermost circumference. Be careful that the gears are not broken.
The sled operation in the test mode is different from the ordinary operation; pressing"⏮" will move the pickup to outer circumference, and pressing "⏭" will move it to inner circumference.

*2: If focus search is engaged for more than 10 minutes continuously, the driver IC (IC501) will generate heat and the protection circuit will begin operation. This could cause focus servo not to be engaged. If this happens, turn the power off, radiate heat for approx. 10 minutes, and then restart tracking servo.

4. Overview of Operations

Each mode can be operated from the start mode in the direction of the arrows as shown in the diagram below. The modes will change along the flow shown in the diagram below.



MD TEST MODE

1. Starting the MD Test Mode

While holding the MD (MD function) button, plug the power cord into an AC outlet.

* MD TEST will appear in the FL display, and the test mode will start.

Caution:

1) Any abnormality in mechanism will be ignored during the test mode. If any abnormality in operation is detected, immediately unplug the power cord from AC outlet.
2) Normal playback or recording cannot be done during the test mode.
3) Occasionally a disc resists full insertion. In such cases, slightly insert the disc and then press the CD▶ MD button: the disc will be inserted all the way.

2. Releasing the MD Test Mode

1) Press the ▲ (EJECT) button to remove the disc.
2) Unplug the power cord.

* If the MD test mode is released by a procedure other than above, the mechanism may not operate normally when the power is switched on again. If this happens, unplug the power cord.

3. MD Test Mode Check

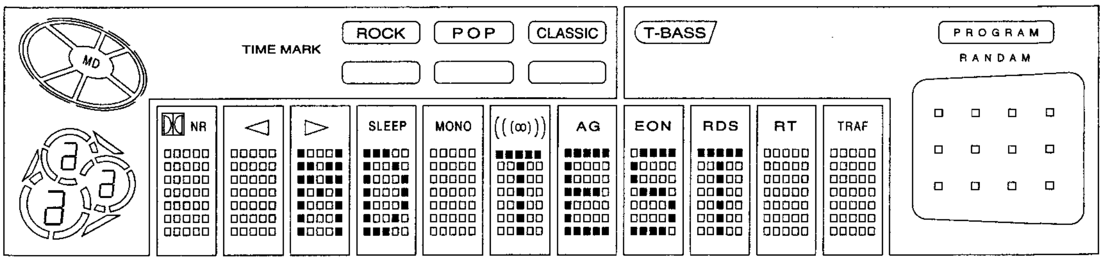
1) Display

Approximately 5 seconds after the test mode is started, the display will be as shown below and the test mode will be engaged.

2) Checking the playback audio circuit

Circuit check, DAC, HP AMP, digital output, HP output.

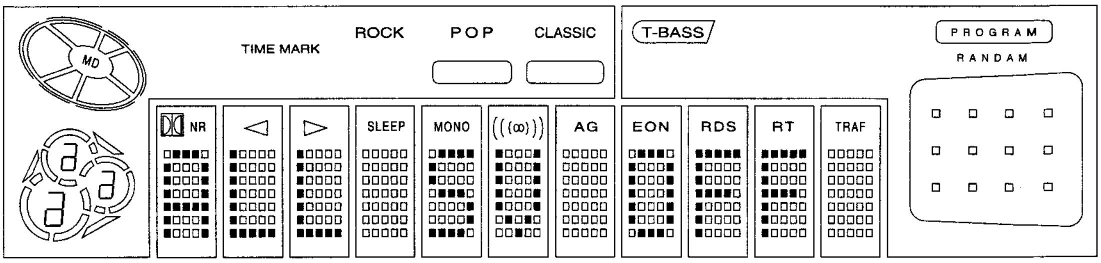
(A 1 kHz signal is output during the MD test mode.)



4. Switching to Servo Standby Mode

After the test mode is started, press the ■ (CLEAR) button to switch to the servo standby mode (ALL SV OFF will appear in the display).

Switching to each mode can be done from this mode.



Press the ■ button in each operation to return to ALL SV OFF.

5. Each Switch Status Check

The MD mechanism switch status can be checked by observing on/off of the frames in the display.

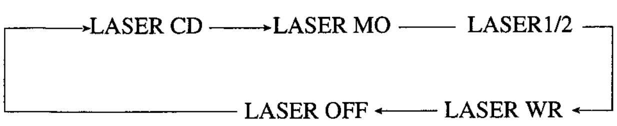
Switch	Status of each frame		When each switch is detected
	SW ON	SW OFF	
REC PROTECT	ROCK	ROCK	When a disc with the erase prevention hole is blocked.
REFLECT	POP	POP	When a disc exclusively for playback is loaded.
INSIDE LIMIT	CLASSIC	CLASSIC	When the pickup is on the innermost circumference.

6. Sled Feed Operation Check

1) Press the (▶▶) (F. SKIP) button in the ALL SV OFF status, and the pickup will move to outer circumference. T. SLED FWD will appear in the display.
2) Press the (◀◀) (B. SKIP) button in the ALL SV OFF status, and the pickup will move to inner circumference. T. SLED RVS will appear in the display.

7. Laser Power Check

1) Pressing the (MD EDIT) (MD EDIT) button in the ALL SV OFF status switches the laser power.
The display will switch as follows:



2) After checking, press the (■) button to return to ALL SV OFF.

8. Loading Mechanism/OWH (Overwrite Head) Operation Check

8-1. Loading mechanism operation check

Press the (CD▶MD) or (▲) button in the ALL SV OFF status to check the loading mechanism.

- (CD▶MD) ... Loading
- (▲) ... Unloading

8-2. OWH operation check

Press the (CD▶MD) or (▲) button in the loading state, and the OWH can move up or down.

- (CD▶MD) ... OWH DOWN
- (▲) ... OWH UP

* Holding the above button down allows the mechanism to stop at the required position during loading or unloading.
The loading mechanism/OWH status can be checked by on/off of DISCO and LIVE HALL frames.

Lighting status of each indication frame	Loading mechanism/ OWH status
ROCK POP CLASSIC ▭ ▭ (under POP, CLASSIC)	Loading/OWH DOWN
ROCK POP CLASSIC	Loading/OWH UP
ROCK POP CLASSIC ▭ ▭ (under ROCK, POP)	Unloading/OWH UP (EJECT state)

* Holding the above button down allows the mechanism to stop at the required position during loading or unloading.

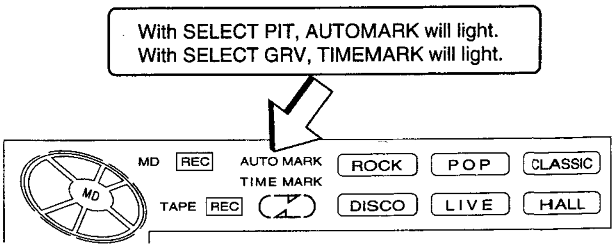
9. Servo Operation Check

9-1. Focus servo/spindle kick check

1) Press the (▶) (PLAY) button without loading a disc in the ALL SV OFF status, and search and spindle kick will repeat. Focus Srch will appear in the display.
2) After checking, press the (■) button to return to ALL SV OFF.

9-2. Focus servo check

1) Load a disc.
2) Press the (MODE) button to align the servo mode with the loaded disc as follows:
   - MO DISC (MO) ... SELECT GRV
   - PIT DISC (CD) ... SELECT PIT


With SELECT PIT, AUTOMARK will light.
With SELECT GRV, TIMEMARK will light.

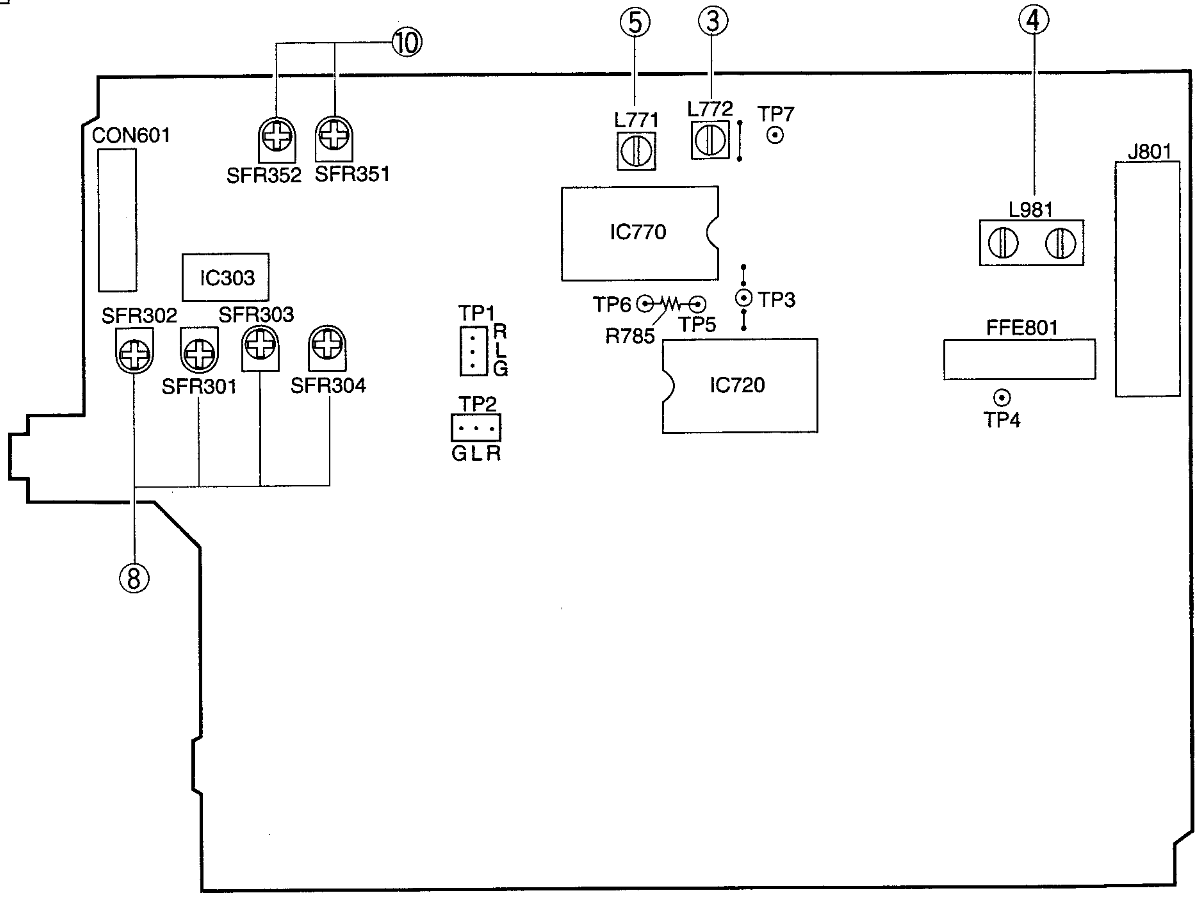
3) Press the (▶) button.
If the focus servo is normal, Focus ON! will appear in the display.
4) After checking, press the (■) button to return to ALL SV OFF.

9-3. All Servo ON Check

1) Press the (ENTER) (ENTER) button with focus servo ON. The tracking and sled servo will come on, and all servo will activate. If all servo blocks are normal, ALL SV ON will appear in the display.
2) After checking, press the (■) button to return to ALL SV OFF.

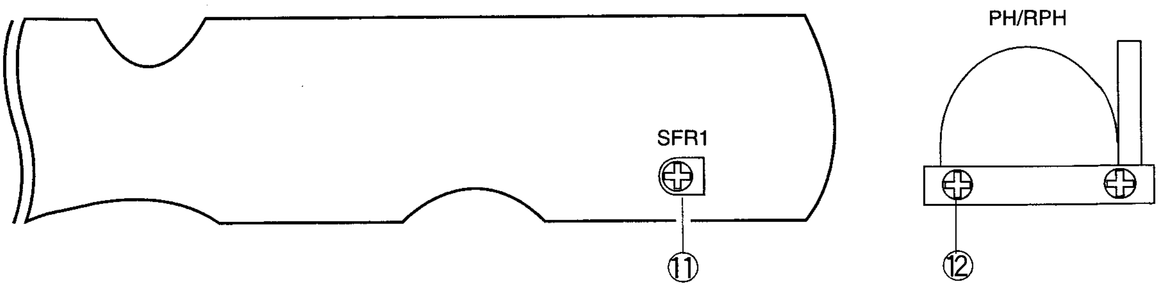
ADJUSTMENT-1 <TUNER/TAPE>

A MAIN C. B



⑩
⑤
③
④
CON601
SFR352
SFR351
L771
L772
TP7
J801
L981
IC770
IC303
SFR302
SFR303
TP1
R
L
G
TP6
R785
TP5
TP3
FFE801
SFR301
SFR304
TP2
GLR
IC720
TP4
⑧

E CAS. DECK C. B



PH/RPH
SFR1
⑪
⑫
(DECK1, 2)

TEST EQUIPMENT

- Oscilloscope
- Frequency Counter
- S.S.G
- Sweep Generator
- Millivoltmeter
- Dist Meter

TUNER SECTION

1. Clock Frequency Check

Settings : · Test Point : TP3

Method : Tune to AM 1602 kHz and make sure that the frequency at the test point is 2052 kHz ± 0.045 kHz.

2. AM VT Check

Settings : · Test Point : TP4 (VT)

Method : Tune to AM 1710 kHz and make sure that the voltage at the test point is 6.0 V ± 1.0 V

3. AM IF Adjustment

Settings : · Test Point : TP2
L772 .... 450 kHz

4. AM Tracking Adjustment

Settings : · Test Point : TP2
· Adjustment Location : L981
Method : Tune to AM 1000 kHz and adjust L981 so that sensitivity is maximum.

5. DC Balance/Monaural Distortion Adjustment

Settings : · Test Point : TP5, TP6 (DC Balance)
TP2 (Distortion)
· Adjustment Location : L771
· Input Level : 54 dB
Method : Tune to FM 98.0 MHz and adjust L771 so that the voltage between TP5 and TP6 is 0 V ± 0.04 V. After adjustment, make sure that distortion is 1.3% or less.

6. AM Stereo Separation Check

Settings : · Test Point : TP2
· Input Level : 74 dB
Method : Tune to AM 999 kHz and make sure that the output at TP2 is 12 dB or more.

7. FM Stereo Separation Check

Settings : · Test Point : TP2
· Input Level : 54 dB
Method : Tune to FM 98.0 MHz and make sure that the output at TP2 is 25 dB or more.

8. AM Output Level Check

Settings : · Test Point : TP2
· Input Level : 74 dB
Method : Tune to AM 999 kHz and make sure that the output at TP2 is 150 mV ± 3 dB.

9. FM Output Level Check

Settings : · Test Point : TP2
· Input Level : 54 dB
Method : Tune to FM 98.0 MHz and make sure that the output at TP2 is 600 mV ± J3 dB.

10. FM Tuning Light ON Check

Settings : · Test Point : TP2
· Input Level : VARIABLE
Method : Tune to FM 98.0 MHz and make sure that the light goes on when the output at TP2 is 25 ± 10 dB.

TAPE SECTION

11. Tape Speed Adjustment

Settings : · Test Tape : TTA-100
· Test Point : TP1
· Adjustment Location : SFR1
Method : Play back the test tape and adjust SFR1 so that the frequency counter reads 3000 ± 5 Hz.

12. Azimuth Adjustment

Settings : · Test Tape : TTA-300
· Test Point : TP1
· Adjustment Location : Azimuth adjustment screw
Method : Play back the 10 kHz section of the test tape and adjust the screw so that the output is maximum.

13. Playback Sensitivity Adjustment (DECK 1, DECK 2)

Settings : · Test Tape : TTA-200
· Test Point : TP2
· Adjustment Location : SFR301 (DECK1, Lch)
SFR302 (DECK1, Rch)
SFR303 (DECK2, Lch)
SFR304 (DECK2, Rch)
Method : Play back the test tape and adjust each SFR so that the outputs at TP8 and TP9 are 330 ± 10 mV.

14. Playback Frequency Response Check (DECK 1, DECK 2)

Settings : · Test Tape : TTA-300
· Test Point : TP2
Method : Play back the 315Hz and 10kHz sections and make sure that their output difference is within 0 ± 3 dB.

15. Recording/Playback Frequency Response Check (DECK 2)

Settings : · Test Tape : TTA-602
· Test Point : TP2
· Input Signals : 1 kHz / 10 kHz (LINE IN)
· Adjustment Location : SFR351 (Lch),
SFR352 (Rch)
Method : Set the deck to the recording mode, input the 1kHz and 10kHz signals from LINE IN so that the output at TP2 is 18 mV, and record and play themback. Adjust each SFR so that their output difference is 0 ± 0.5 dB.

16. Recording/Playback Sensitivity Check

Settings : · Test Tape : TTA-602
· Test Point : TP2
· Input Signal : 1 kHz (LINE IN)
Method : Set the deck to the recording mode, and input the 1kHz signal from LINE IN so that the output at TP2 is 18 mV, and record and play it back. Make sure that the output is 18 mV ± 0.5 dB.

PRACTICAL SERVICE FIGURE

<TUNER SECTION>

<FM SECTION>

IHF Sensitivity : 2 dB±6 dB
(THD 3%) (at 87.5 / 98.0 / 108.0 MHz)
S/N 50 dB Quieting sensitivity : 30 dB±60 dB
(at 87.5 / 98.0 / 108.0 MHz)
Signal to noise ratio : More than 64 dB (at 98.0 MHz)
Distortion : Less than 2.0% (at 98.0 MHz)
Stereo separation : More than 25 dB (at 98.0 MHz)
Intermediate frequency : 10.7 MHz

<AM (MW) SECTION>

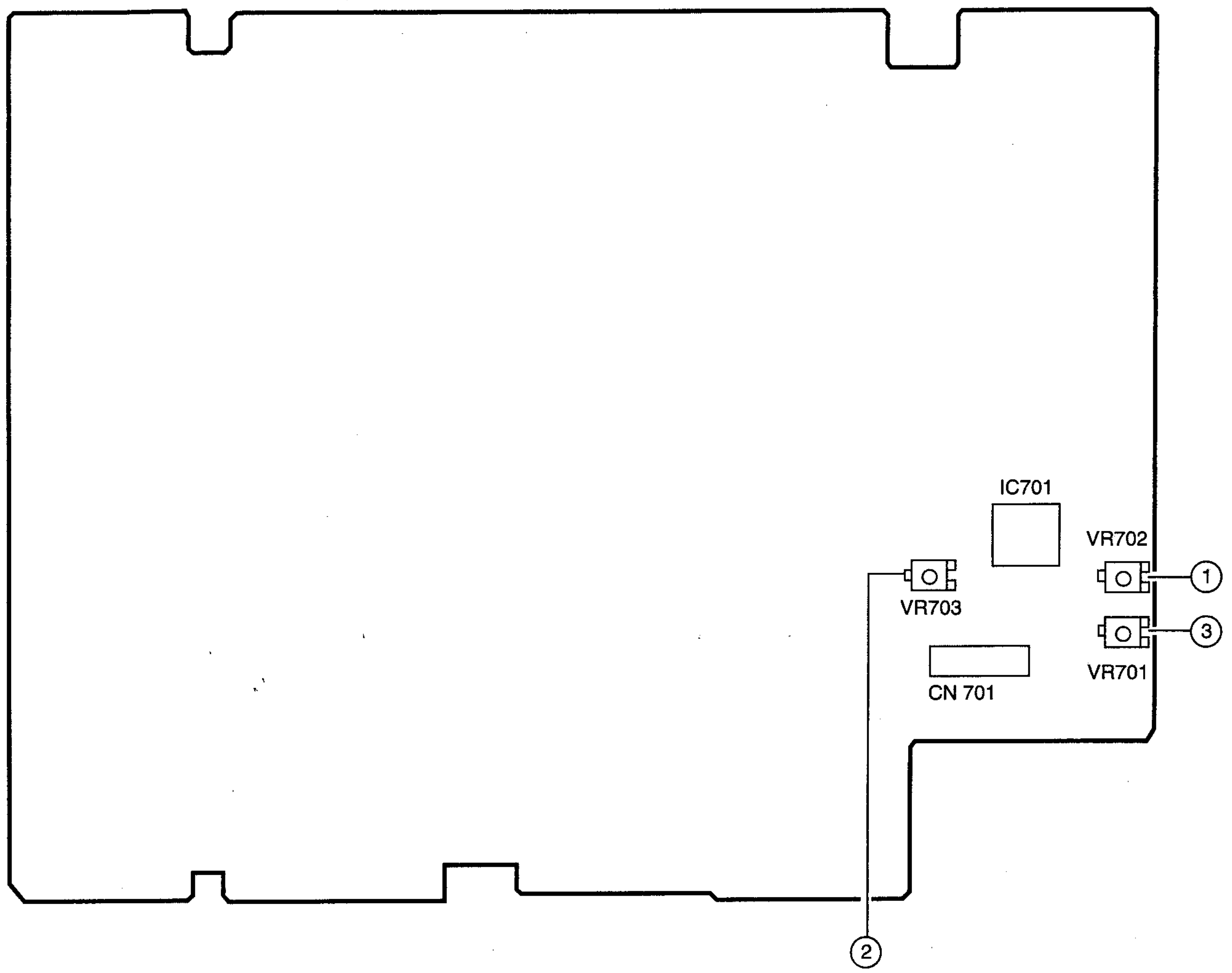
Sensitivity : 55 dB±5 dB (at 603 kHz)
(S/N 20 dB) 53 dB±5 dB (at 1000 kHz)
51 dB±5 dB (at 1400 kHz)
Signal to noise ratio : More than 36 dB (at 1000 kHz)
Distortion : Less than 4.0 dB (at 1000 kHz)
Auto stop level : 53 dB±13 dB (at 1000 kHz)
Intermediate frequency : 450 kHz

<DECK SECTION>

Tape speed : 3000 Hz±45 Hz
Wow & flutter : Less than 0.25% (W.R.M.S)
Take-up torque : 30 ~ 55 g-cm
F.F & REW torque : 75 ~ 180 g-cm
Back tension : 2 ~ 7 g-cm
PB output level : 2.9 V±3 dB (SP OUT)
REC/PB output level : 1.6 V±3 dB (SP OUT)
Distortion (REC/PB) : Less than 2.0% (NORM)
Crosstalk : More than 60 dB (1 kHz, 0 VU)
Channel separation : More than 30 dB (1 kHz, 0 VU)
Erasing ratio : More than 60 dB (at 125 Hz, 10 VU)
Test tape : TTA-602 (NORMAL)

ADJUSTMENT - 2 <MD>

F MD MAIN C.B



(All adjustments and check must be performed in the test mode)

1. Temperature Compensation Adjustment

- Test point: Check the display
- Adjustment point: SFR702
- Jig: Thermometer
- Procedure

1) Start the MD test mode and press the ■ button so that ALL SV OFF appears in the display.
2) Press the DISP button to switch the indication in the display to "TEMP $ ✱ ✱ ".
3) Place a thermometer near the MD mechanism and measure the room temperature.
4) Adjust SFR702 so that the measured temperature is set within the range of values in the display, as in the table below.
5) After adjustment, press the ■ button to return to ALL SV OFF.

Measured temperature	Value range	Center value ($ ✱ ✱)
–7 ~ –2	B7 ~ C9	C0
–2 ~ 3	BF ~ D1	C8
3 ~ 8	C7 ~ D9	D0
8 ~ 13	CF ~ E1	D8
13 ~ 18	D7 ~ E9	E0
18 ~ 23	DF ~ F1	E8
23 ~ 28	E7 ~ F9	F0
28 ~ 33	EF ~ 01	F8
33 ~ 28	F7 ~ 09	00

* Values in the display are given in hexadecimal.

Caution:

Do not perform this adjustment when the room temperature cannot

2. Laser Power Adjustment

- Test point: Pickup laser output
- Adjustment point: SFR703
- Test equipment: Laser power meter
- Procedure

1) Press the MD EDIT button four times in the ALL SV OFF status to switch the display to "LASER WR".
2) Measure the pickup laser output with a laser power meter, and adjust SFR703 so that it is 6.8 ± 0.15 mW.
3) After adjustment, press the ■ button to return to ALL SV OFF.

Caution:

If the laser output exceeds 7.0 mW, the pickup could be damaged.

3. EF Balance Adjustment

- Test point: Check the display
- Adjustment point: SFR701
- Test disc: MO disc
- Procedure

1) Load the disc.
2) Press the ▶▶ button in the ALL SV OFF status to move the pickup slightly from the innermost circumference to an outer circumference.
3) Press the MODE button to select "SELECT GRV".
4) Press the VIDEO/AUX button. After approx. 5 seconds, "SE$ ✱ ✱ " will appear in the display.
5) Adjust SFR701 so the display shows "SE$71~$8E" centering on "SE$80".
6) After adjustment, press the ■ button to return to ALL SV OFF.

4. Focus, Tracking and Sled Gain Check

- Test point: Check the display
- Test disc: TGYS-1 (PIT DISC)
- Procedure

1) Load the test disc.
2) Press the ▶▶ button in the ALL SV OFF status to move the pickup slightly from the innermost circumference to an outer circumference.
3) Press the operation buttons in this order: ▶ , ENTER and ■ .
4) Press the DISP button three times, and make sure that the values in the display are in the ranges shown below.
5) After checking, press the ■ button to return to ALL SV OFF.

Display → G f ✱ ✱ t ✱ ✱ s ✱ ✱

- G f ✱ ✱ (focus gain) .... 28~5C
- t ✱ ✱ (tracking gain) ... 13~38
- s ✱ ✱ (sled gain) .... 13~38

5. Error Rate Check

Be sure to check the error rate after replacing the pickup or OWH.

Display when checking error rate

✱ ✱ ✱ c ✱ ✱ ✱ E ✱ ✱ ✱

5-1-1. Recording/playback error rate check (1)

- Test point: Check the display
- Test disc: MO disc
- Procedure

1) Load the disc.
2) Press the ▶▶ button in the ALL SV OFF status to move the pickup slightly from the innermost circumference to an outer circumference.
3) Press the MODE button to select "SELECT GRV".
4) Press the TUNER BAND button. After approx. 10 seconds, recording will start automatically.
5) Press the ■ button approx. 15 seconds after recording starts.
6) Press the TAPE DECK 1/2 button. After approx. 5 seconds, the error rate will appear in the display.
   Make sure that the error rate in the recorded section is C030 or less.
7) After checking, press the ■ button to return to ALL SV OFF.

Caution:

The addresses at the start of recording on MO disc are for 32nd cluster or later.

Check the recording/playback error rate around the 600th cluster.

5-1-2. Recording/playback Error Rate Check (2)

- Test point: Check the display
- Test disc: MO disc
- Procedure

1) Without using the test mode, record music from the top of disc (from any source).
2) Start the MD test mode, and press the ■ button so that ALL SV OFF appears in the display.
3) Press the MODE button to select "SELECT GRV".
4) Press the TAPE DECK 1/2 button. After several seconds, the error rate will appear in the display.
   Make sure that the error rate in the recorded section is C060 or less (reference value).
5) After checking, press the ■ button to return to ALL SV OFF.

2. Laser Power Adjustment

- Test point: Pickup laser output
- Adjustment point: SFR703
- Test equipment: Laser power meter
- Procedure

1) Press the M.D EDIT button four times in the ALL SV OFF status to switch the display to "LASER WR".
2) Measure the pickup laser output with a laser power meter, and adjust SFR703 so that it is 6.8 ± 0.15 mW.
3) After adjustment, press the ■ button to return to ALL SV OFF.

Caution:

If the laser output exceeds 7.0 mW, the pickup could be damaged.

3. EF Balance Adjustment

- Test point: Check the display
- Adjustment point: SFR701
- Test disc: MO disc
- Procedure

1) Load the disc.
2) Press the ▶▶ button in the ALL SV OFF status to move the pickup slightly from the innermost circumference to an outer circumference.
3) Press the MODE button to select "SELECT GRV".
4) Press the VIDEO/AUX button. After approx. 5 seconds, "SE$＊＊" will appear in the display.
5) Adjust SFR701 so the display shows "SE$71~$8E" centering on "SE$80".
6) After adjustment, press the ■ button to return to ALL SV OFF.

4. Focus, Tracking and Sled Gain Check

- Test point: Check the display
- Test disc: TGYS-1 (PIT DISC)
- Procedure

1) Load the test disc.
2) Press the ▶▶ button in the ALL SV OFF status to move the pickup slightly from the innermost circumference to an outer circumference.
3) Press the operation buttons in this order: ▶, ENTER and ■.
4) Press the DISP button three times, and make sure that the values in the display are in the ranges shown below.
5) After checking, press the ■ button to return to ALL SV OFF.

Display → G f ＊＊ t ＊＊ s ＊＊

- G f ＊＊ (focus gain) .... 28~5C
- t ＊＊ (tracking gain) ... 13~38
- s ＊＊ (sled gain) .... 13~38

5. Error Rate Check

Be sure to check the error rate after replacing the pickup or OWH.

Display when checking error rate

＊＊＊c＊＊＊E＊＊＊

5-1-1. Recording/playback error rate check (1)

- Test point: Check the display
- Test disc: MO disc
- Procedure

1) Load the disc.
2) Press the ▶▶ button in the ALL SV OFF status to move the pickup slightly from the innermost circumference to an outer circumference.
3) Press the MODE button to select "SELECT GRV".
4) Press the TUNER BAND button. After approx. 10 seconds, recording will start automatically.
5) Press the ■ button approx. 15 seconds after recording starts.
6) Press the TAPE DECK 1/2 button. After approx. 5 seconds, the error rate will appear in the display.
   Make sure that the error rate in the recorded section is C030 or less.
7) After checking, press the ■ button to return to ALL SV OFF.

Caution:

The addresses at the start of recording on MO disc are for 32nd cluster or later.

Check the recording/playback error rate around the 600th cluster.

5-1-2. Recording/playback Error Rate Check (2)

- Test point: Check the display
- Test disc: MO disc
- Procedure

1) Without using the test mode, record music from the top of disc (from any source).
2) Start the MD test mode, and press the ■ button so that ALL SV OFF appears in the display.
3) Press the MODE button to select "SELECT GRV".
4) Press the TAPE DECK 1/2 button. After several seconds, the error rate will appear in the display.
   Make sure that the error rate in the recorded section is c060 or less (reference value).
5) After checking, press the ■ button to return to ALL SV OFF.

5-2-1. PIT DISC Playback Error Rate Check

- Test point: Check the display
- Test disc: TGYS-1 (PIT DISC)
- Procedure

1) Load the disc.
2) Press the ▶▶ button in the ALL SV OFF status to move the pickup slightly from the innermost circumference to an outer circumference.
3) Press the MODE button to select "SELECT PIT".
4) Press the TAPE DECK 1/2 button. After several seconds, the error rate will appear in the display.
   Make sure that the playback error rate is C050 or less.
5) After checking, press the ■ button to return to ALL SV OFF.

5-2-2. MO DISC PIT Section (Innermost Circumference) Playback Error Rate Check

- Test point: Check the display
- Test disc: MO disc
- Procedure

1) Load the disc.
2) Press the ◀◀ button in the ALL SV OFF status to move the pickup to the innermost circumference.
   Make sure that CLASSIC the frame lights in the display.
3) Press the MODE button to select "SELECT PIT".
4) Press the TAPE DECK 1/2 button. After several seconds, the error rate will appear in the display.
   Make sure that the playback error rate is c060 or less.
5) After checking, press the ■ button to return to ALL SV OFF.

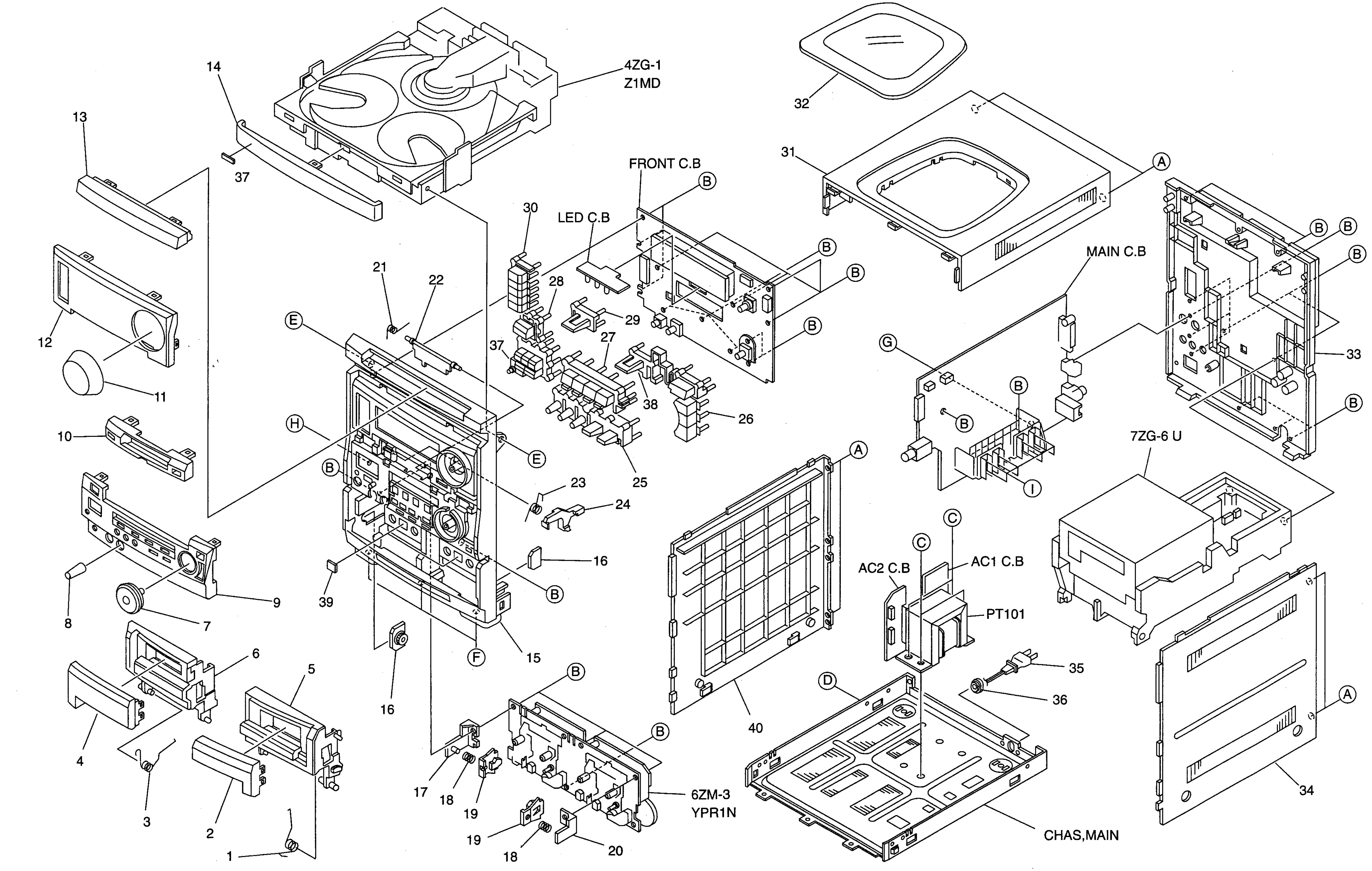
5-2-3. MO DISC Playback Error Rate Check

- Test point: Check the display
- Test disc: MO disc (on which music has been recorded)
- Procedure

1) Load the disc.
2) Press the ▶▶ button in the ALL SV OFF status to move the pickup slightly from the innermost circumference to an outer circumference.
3) Press the MODE button to select "SELECT GRV".
4) Press the TAPE DECK 1/2 button. After several seconds, the error rate will appear in the display.
   Make sure that the playback error rate is c060 or less (reference value).
5) After checking, press the ■ button to return to ALL SV OFF.

* This check can be used to judge whether a disc is normal.

MECHANICAL EXPLODED VIEW 1/1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FRONT C.B
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6ZM-3
YPR1N
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MAIN C.B
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A
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7ZG-6 U
C
C
AC2 C.B
AC1 C.B
PT101
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36
D
CHAS,MAIN
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A

MECHA

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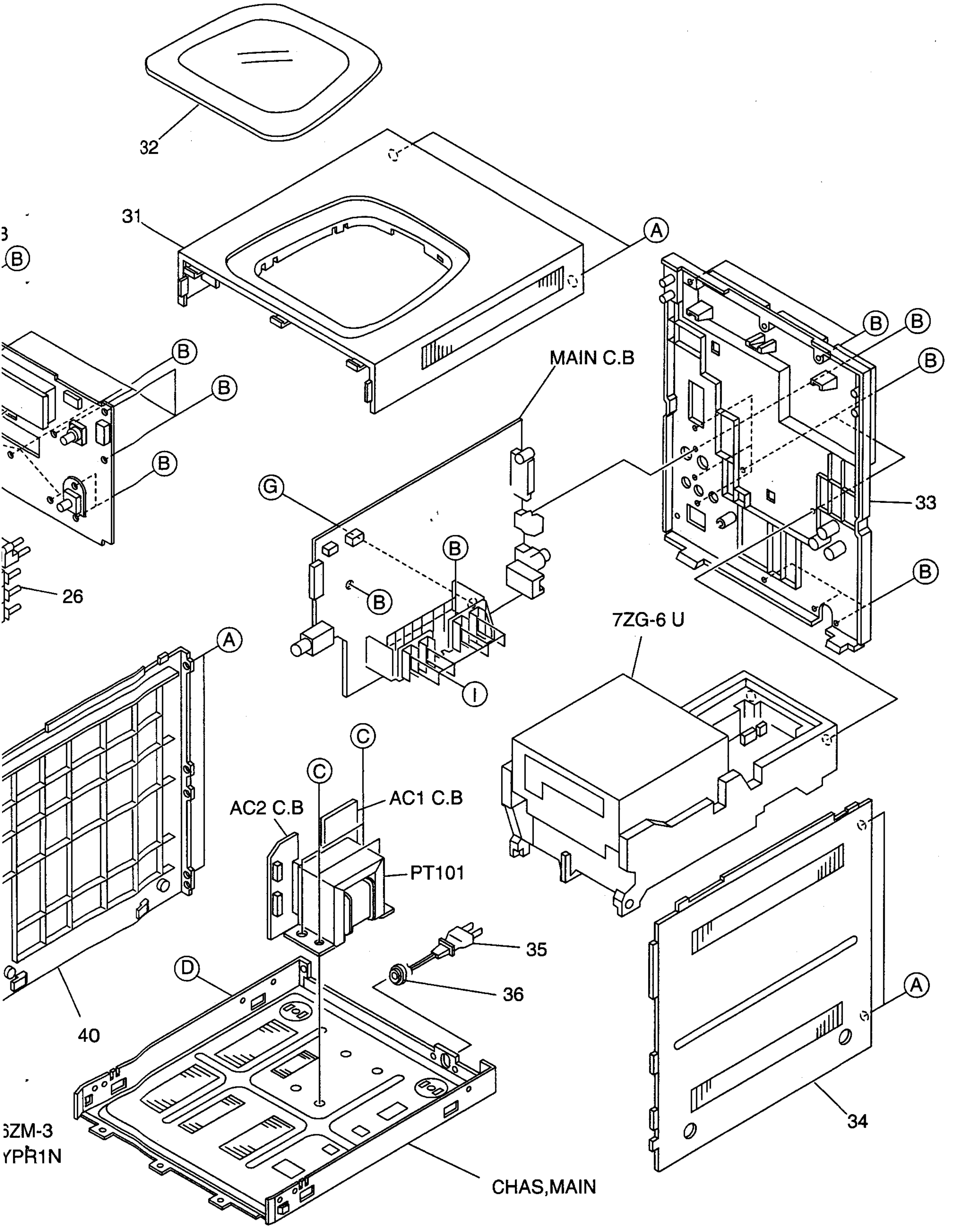
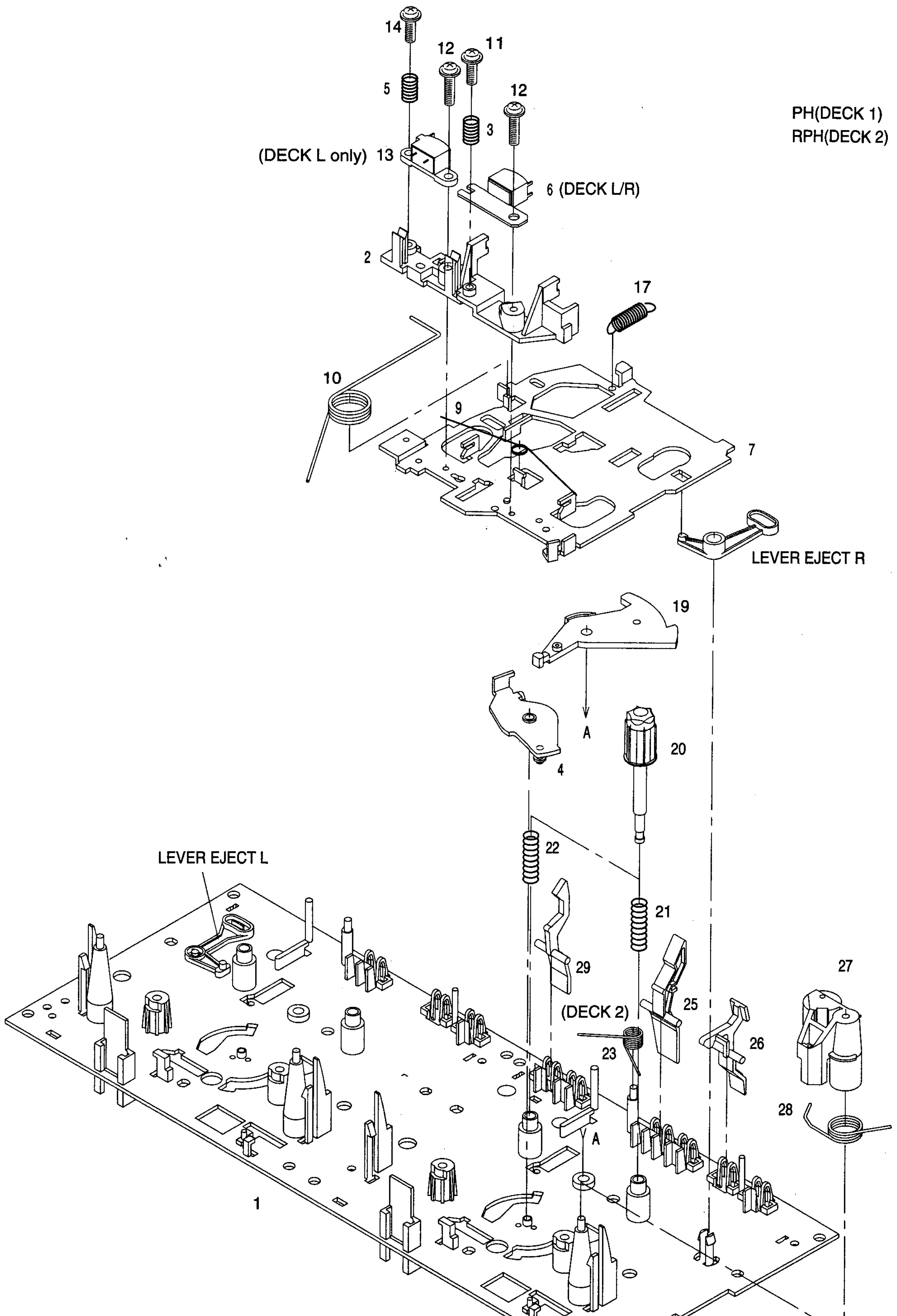


MECHANICAL PARTS LIST 1/1

DESCRIPTIONで判断できない物は "REFERENCE NAME LIST" を参照してください。
If can't understand for Description please kindly refer to "REFERENCE NAME LIST".

REF. NO	PART NO.	KANRI NO.	DESCRIPTION
1	82-NF5-219-010		SPR-T,EJECT 2 (SIN)
2	87-NB7-015-110		WINDOW,CASS 2
3	82-NF5-218-010		SPR-T,EJECT 1 (SIN)
4	87-NB7-014-110		WINDOW,CASS 1
5	87-NB7-004-210		BOX,CASS 2
6	87-NB7-003-210		BOX,CASS 1
7	87-NB7-011-010		KNOB,RTRY MD
8	87-NB7-021-010		KNOB,RTRY MIC
9	87-NB7-019-010		PANEL,FR
10	87-NB7-020-010		PANEL,MD
11	87-NB7-012-010		KNOB,RTRY VOL
12	87-NB7-013-110		WINDOW,DISPLAY
13	87-NB7-016-010		WINDOW,CD
14	87-NB7-018-010		PANEL,TRAY
15	87-NB7-027-010		CABI,FR U
16	87-063-165-010		OIL-DMPR 150
17	87-NF4-216-010		HLDR,LOCK 1
18	82-NF5-228-010		SPR-C,LOCK
19	82-NF5-229-010		PLATE,LOCK
20	87-NF4-217-010		HLDR,LOCK 2
21	85-NC1-210-110		SPR-T,PANEL
22	87-NB7-017-110		PANEL,DISC
23	85-NC1-209-010		SPR-T,LVR
24	85-NC1-205-210		LEVER,OPEN
25	87-NB7-008-010		KEY,CD
26	87-NB7-006-010		KEY,MD
27	87-NB7-010-010		KEY,OPE
28	87-NB7-005-010		KEY,POWER
29	87-NB7-007-010		KEY,SYNC
30	87-NB7-009-110		KEY,FUN
31	87-NF6-021-010		PANEL,TOP
32	86-NF6-007-010		WINDOW,TOP
33	87-NB7-033-010		CABI,REAR UST
34	87-NB7-029-010		PANEL,RIGHT U
⚠ 35	87-050-053-010		AC CORD ASSY,U-2
36	87-085-189-010		BUSHING, CORD (U)
37	82-NE6-067-010		BADGE,AIWA 30N
37	87-NB7-025-010		KEY,GEQ
38	87-NB7-026-010		KEY,OPEN
39	81-532-080-010		LABEL, CASS. COMPT
40	87-NB7-028-010		PANEL,LEFT U
A	87-067-761-010		TAPPING SCREW, BVT2+3-10
B	87-067-703-010		TAPPING SCREW, BVT2+3-10
C	87-067-585-010		TAPPING SCREW, BVTT+4-6
D	87-721-094-410		QT2+3-6 GLD
E	87-721-097-410		QT2+3-12 GLD
F	87-067-688-010		BVTT+3-6
G	87-NF4-224-010		S-SCREW,IT3B+3-8 CU
H	87-721-096-410		QT2+3-10 GLD
I	87-067-584-010		BVT2+3-6 W/O SLOT

TAPE MECHANISM EXPLODED VIEW 1/1


14
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(DECK L only) 13
6 (DECK L/R)
PH(DECK 1)
RPH(DECK 2)
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10
9
7
LEVER EJECT R
19
A
4
20
22
21
LEVER EJECT L
29
(DECK 2)
25
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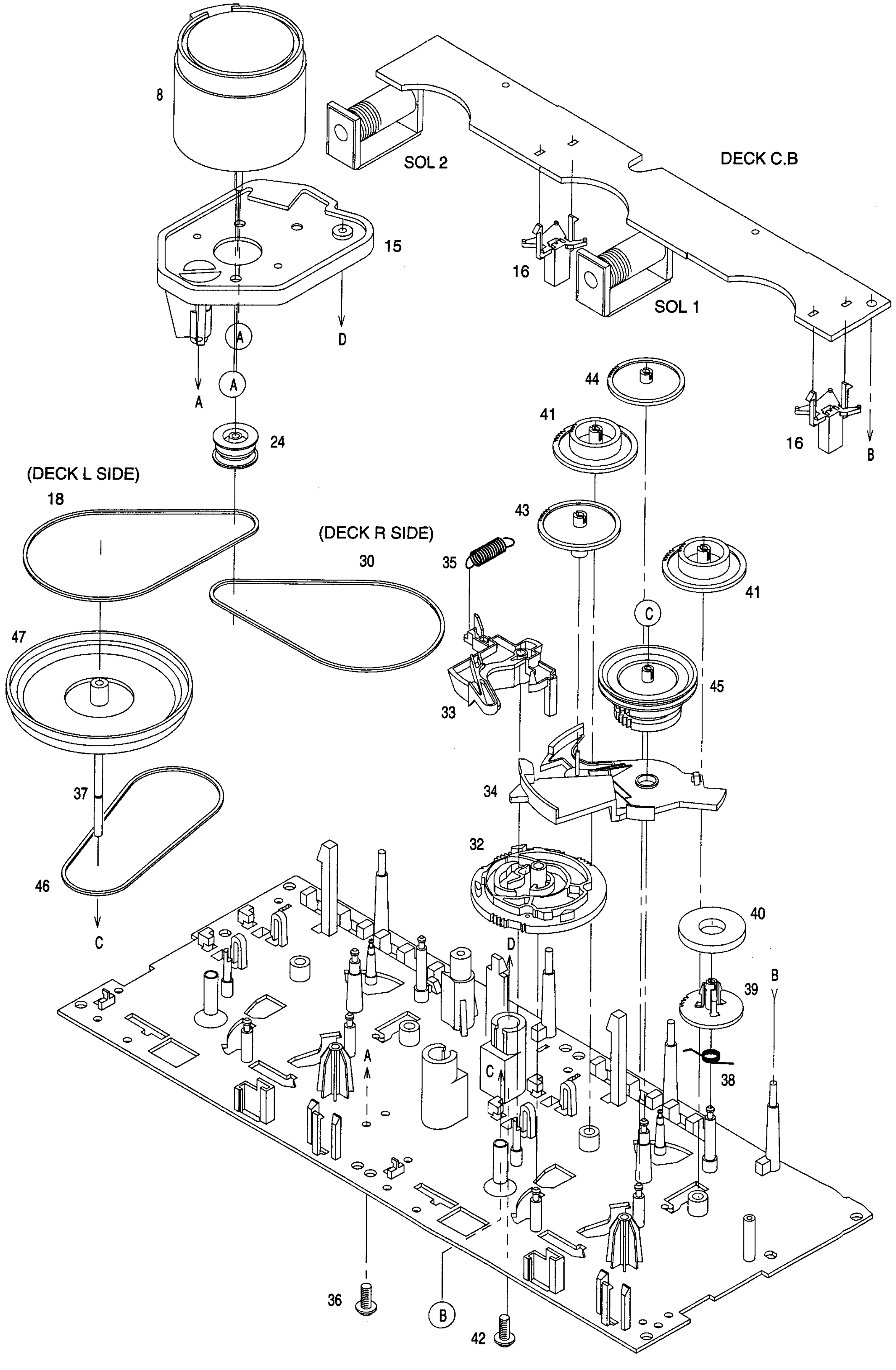
28
1
A


8
SOL 2
DECK C.B
15
16
SOL 1
D
A
A
A
24
44
41
16
B
(DECK L SIDE)
18
43
(DECK R SIDE)
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35
41
47
C
45
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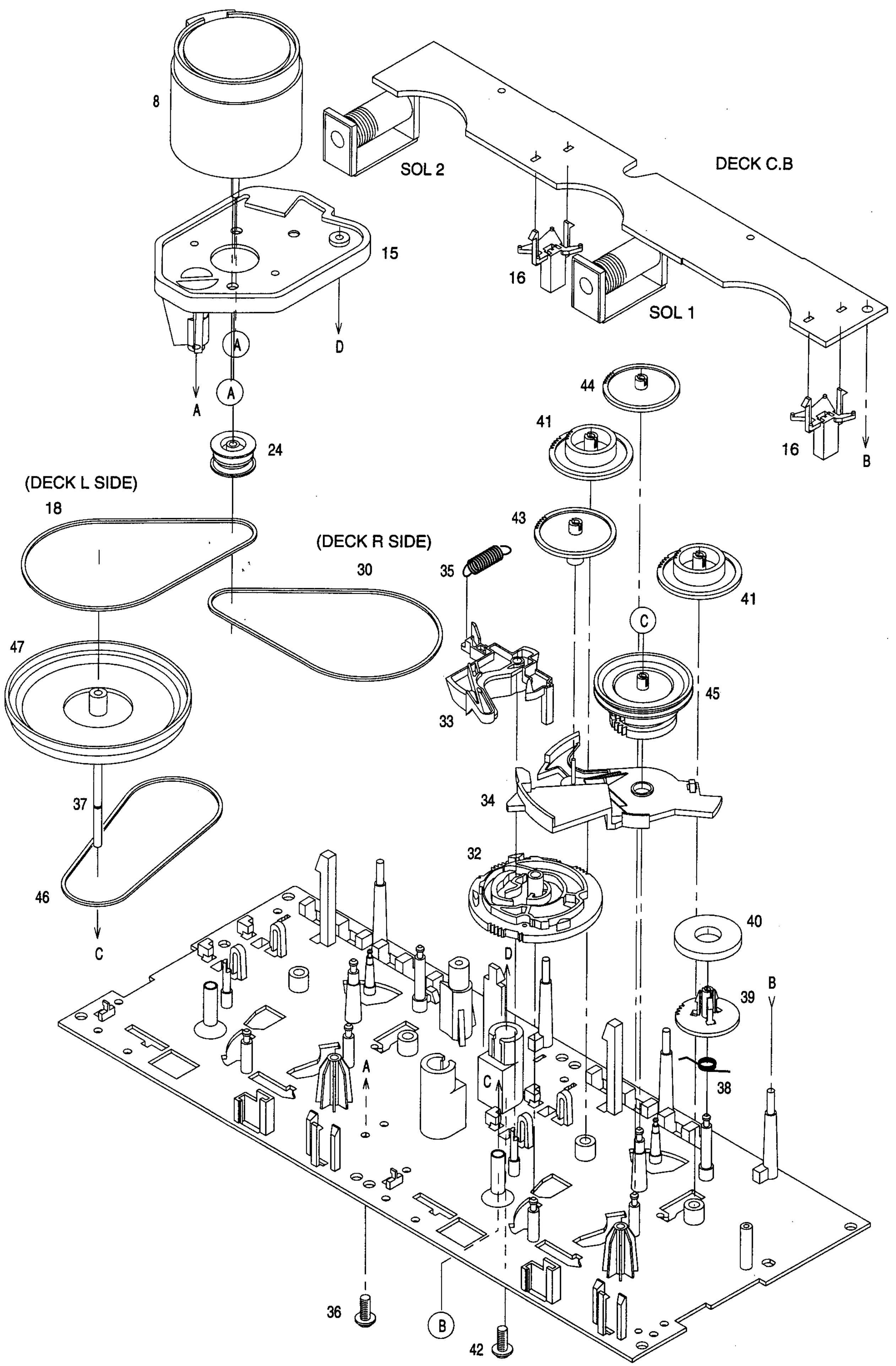
34
37
32
46
C
40
D
B
39
A
C
38
36
B
42

:CK 1)
ECK 2)
:T R
27

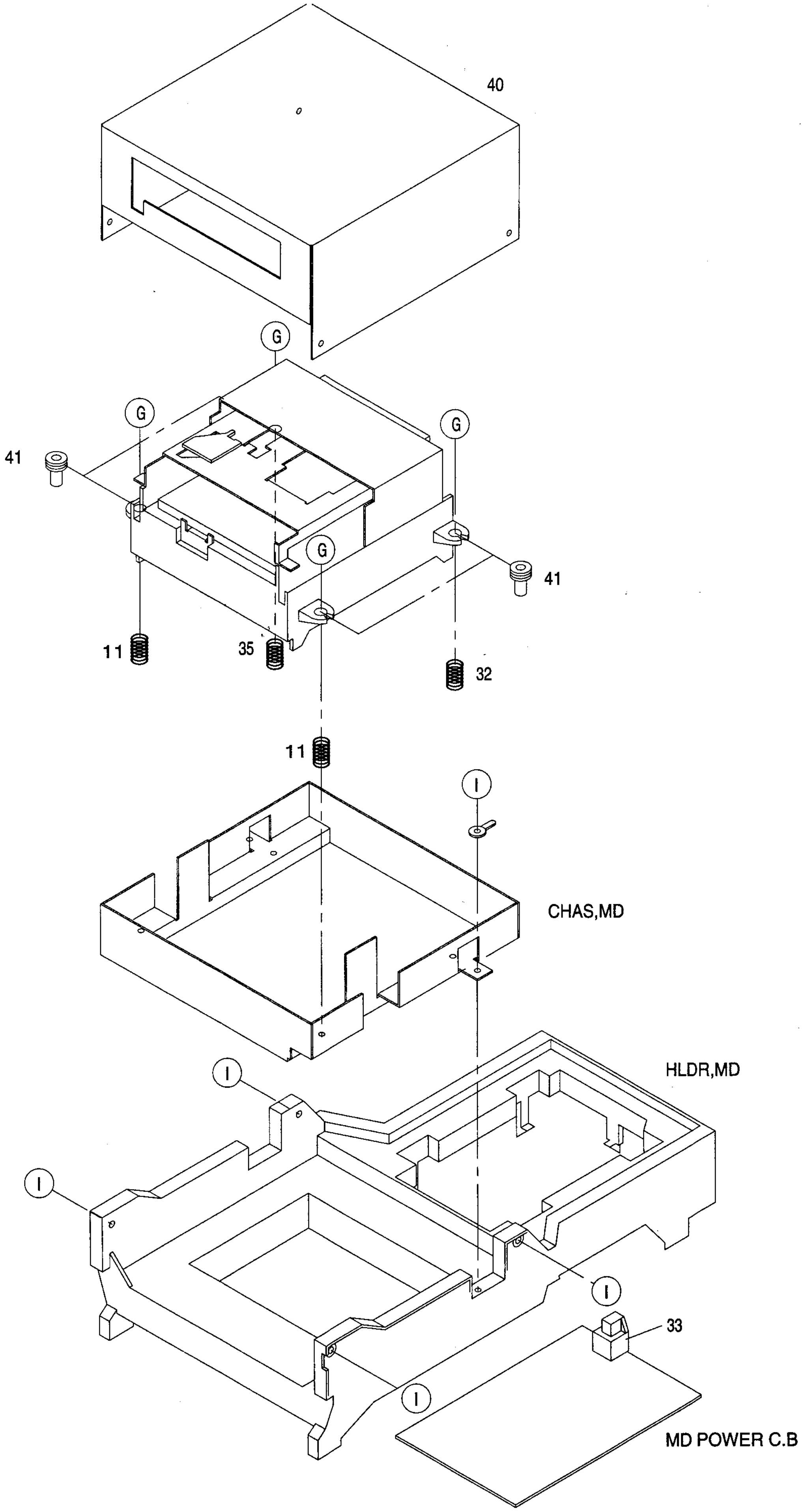


TAPE MECHANISM PARTS LIST 1/1

DESCRIPTIONで判断できない物は "REFERENCE NAME LIST" を参照してください。
If can't understand for Description please kindly refer to "REFERENCE NAME LIST".

REF. NO	PART NO.	KANRI NO.	DESCRIPTION
1	86-ZM3-212-010		CHAS ASSY,SS
2	86-ZM3-202-010		BASE,HEAD S
3	86-ZM3-205-010		SPR-C,RPH S
4	82-ZM1-333-210		PLATE,LINK 2
5	86-ZM3-206-010		SPR-C,EH S
6	87-A90-403-019		HEAD,RPH MS15R
7	86-ZM3-201-010		CHAS,HEAD S
8	87-045-347-019		MOT,SHU2L 70(M1)
9	82-ZM1-269-219		SPR-T,BRG
10	82-ZM1-219-110		SPR-T,LINK
11	86-ZM3-209-010		S-SCREW,ASIMUTHS
12	86-ZM3-207-010		S-SCREW,RPH
13	87-A90-404-019		HEAD,EH LE15B
14	86-ZM3-208-010		S-SCREW,EH
15	86-ZM3-203-010		HLDR,MOTS
16	82-ZM1-245-210		HLDR,IC
17	82-ZM1-218-019		SPR-E,HB
18	82-ZM3-211-010		BELT,RS
19	82-ZM1-222-219		LVR,PLAY
20	82-ZM1-217-419		REEL TABLE
21	82-ZM1-244-519		SPR-C,BT
22	82-ZM1-285-410		SPR-C,BT L
23	82-ZM1-257-019		SPR-T,CAS
24	82-ZM3-221-010		PULLEY,MOT 2M
25	82-ZM1-242-019		LVR,CAS
26	82-ZM1-243-019		LVR,STOP
27	82-ZM1-344-119		LVR ASSY,PINCH
28	86-ZM3-204-010		SPR-T,PINCHDS
29	82-ZM1-240-119		LVR,REC (DECK 2)
30	86-ZM3-210-010		BELT,RS
32	82-ZM3-305-119		GEAR,CAM M2
33	82-ZM1-227-319		LVR,TRIG
34	82-ZM3-306-110		LVR,FR M2
35	82-ZM1-265-119		SPR-E,TRIG
36	87-761-073-419		VFT2+2.6-6 W/O SLOT
37	82-ZM1-239-019		CAPSTAN N 2.2-41.7
38	82-ZM1-322-019		SPR-T,FR60
39	82-ZM1-220-219		GEAR,IDLER
40	82-ZM3-616-019		RING MAGNET 4
41	82-ZM1-216-319		GEAR,REEL
42	86-ZM3-213-010		S-SCREW,HLDR,MOT 3
43	82-ZM1-225-219		GEAR,FR
44	82-ZM1-226-019		GEAR,REW
45	82-ZM3-333-310		SLIP DISK ASSY 2
46	82-ZM1-338-010		BELT FR4
47	82-ZM1-349-019		FLY-WHL RW (DECK L)
47	82-ZM3-331-019		FLY-WHL R2W (DECK R)
A	87-251-071-417		U+2.6-4
B	80-ZM6-243-019		SH,1.75-3.6-0.5 SLT
C	82-ZM3-334-010		PW,2.16-6-0.4

MD MECHANISM EXPLODED VIEW 1/2


40
G
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I
CHAS,MD
HLDR,MD
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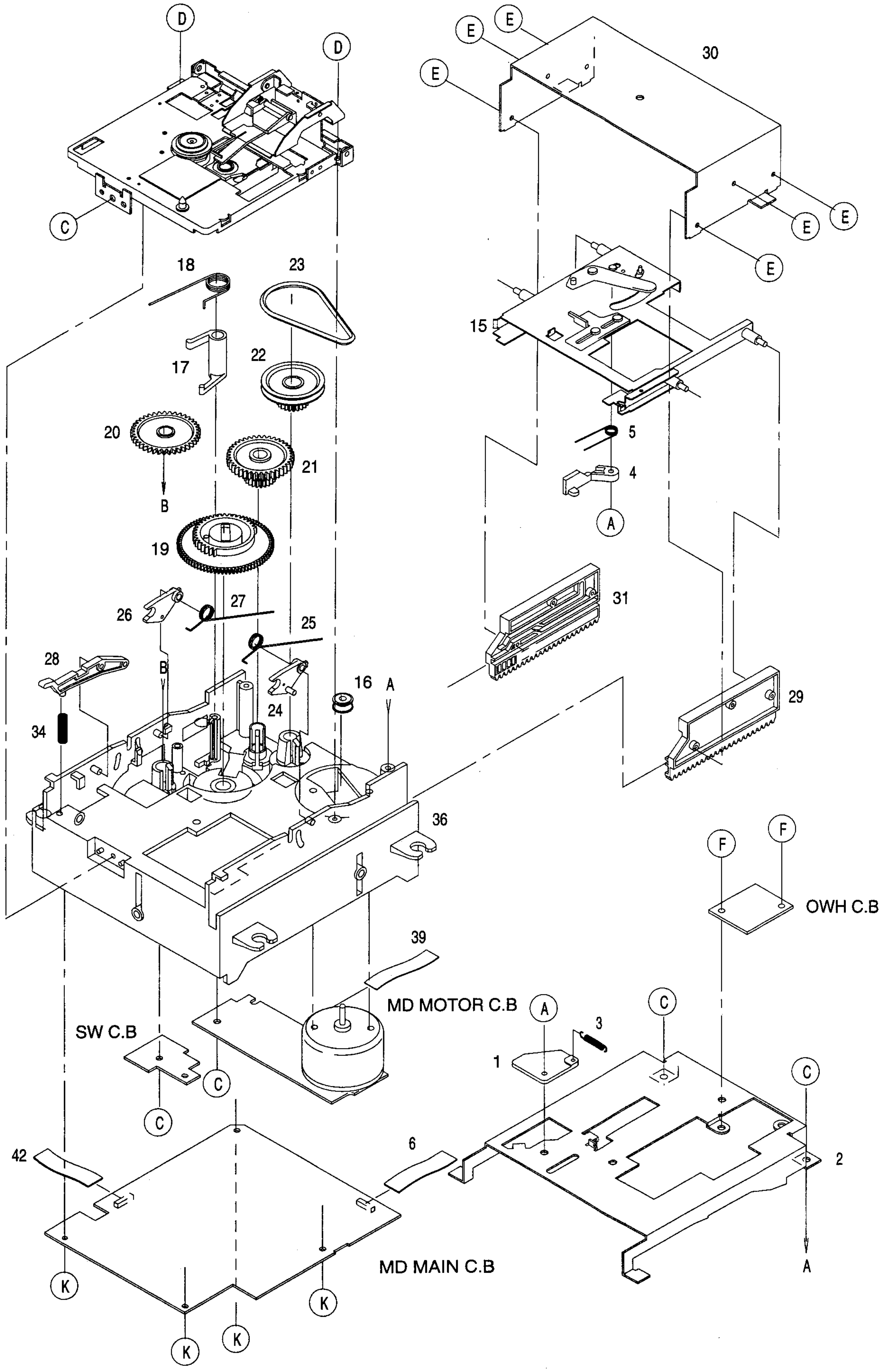
33
MD POWER C.B


D
D
C
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OWH C.B
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MD MOTOR C.B
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SW C.B
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42
6
MD MAIN C.B
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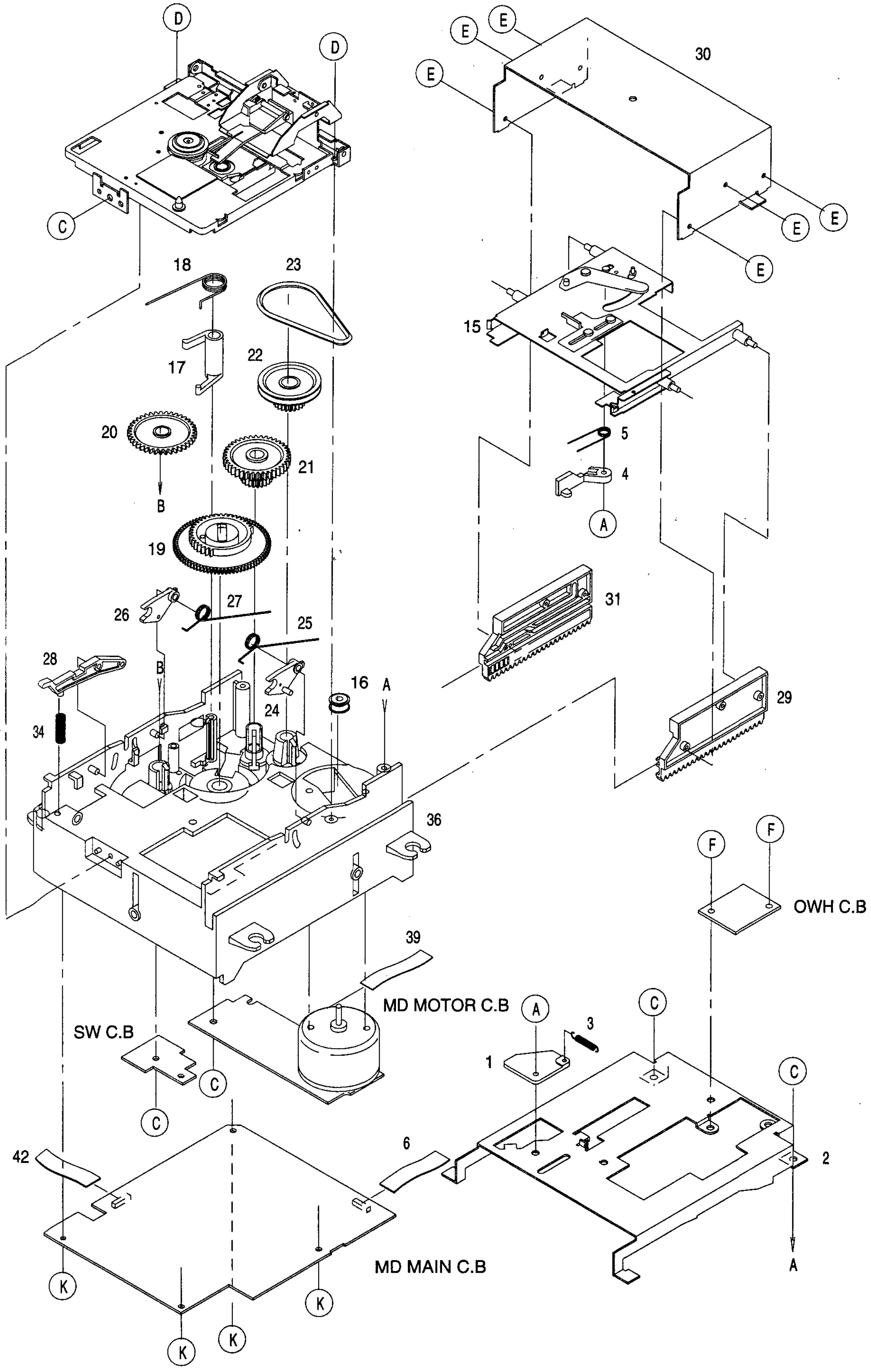
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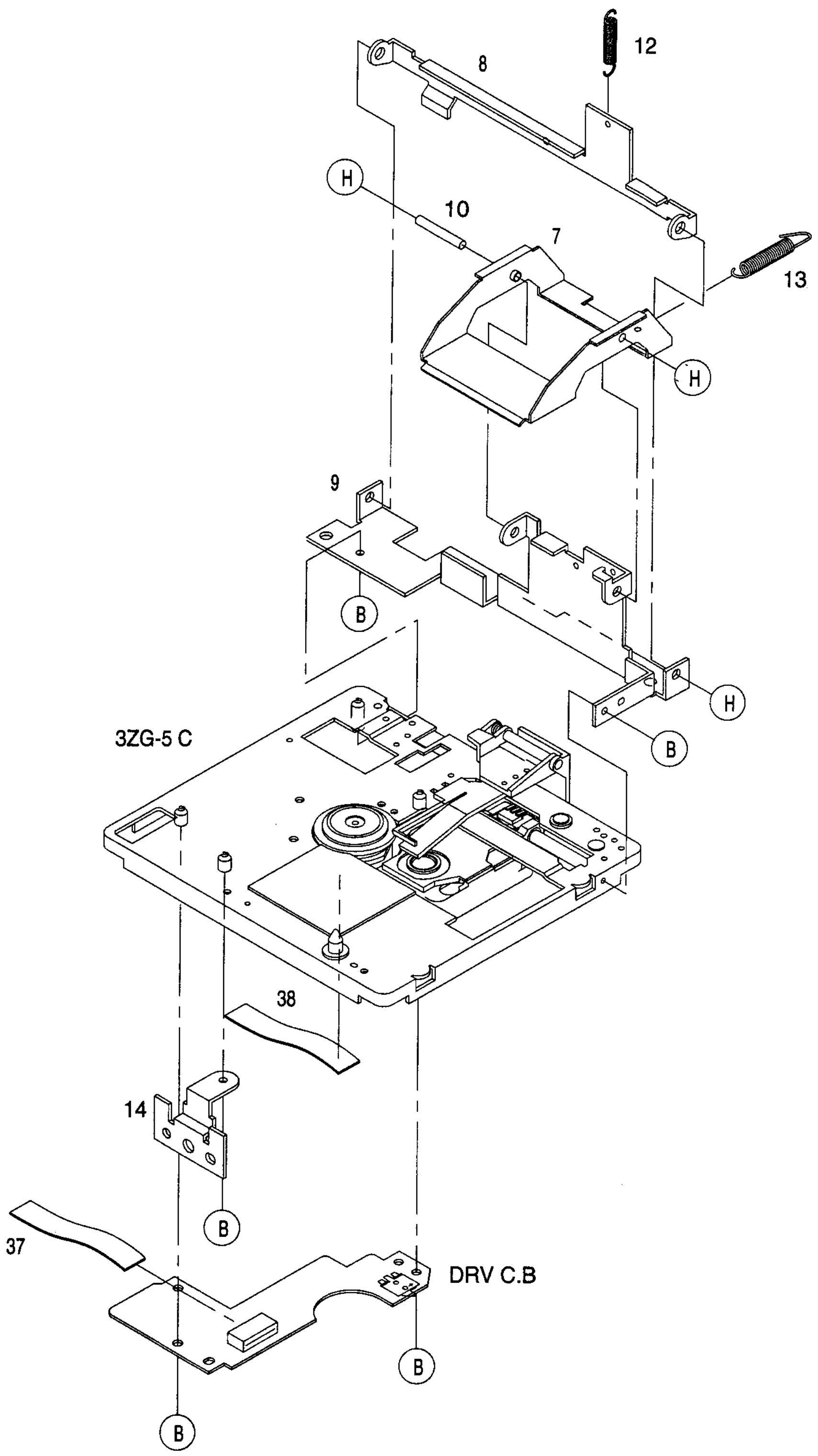
12
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3ZG-5 C
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DRV C.B
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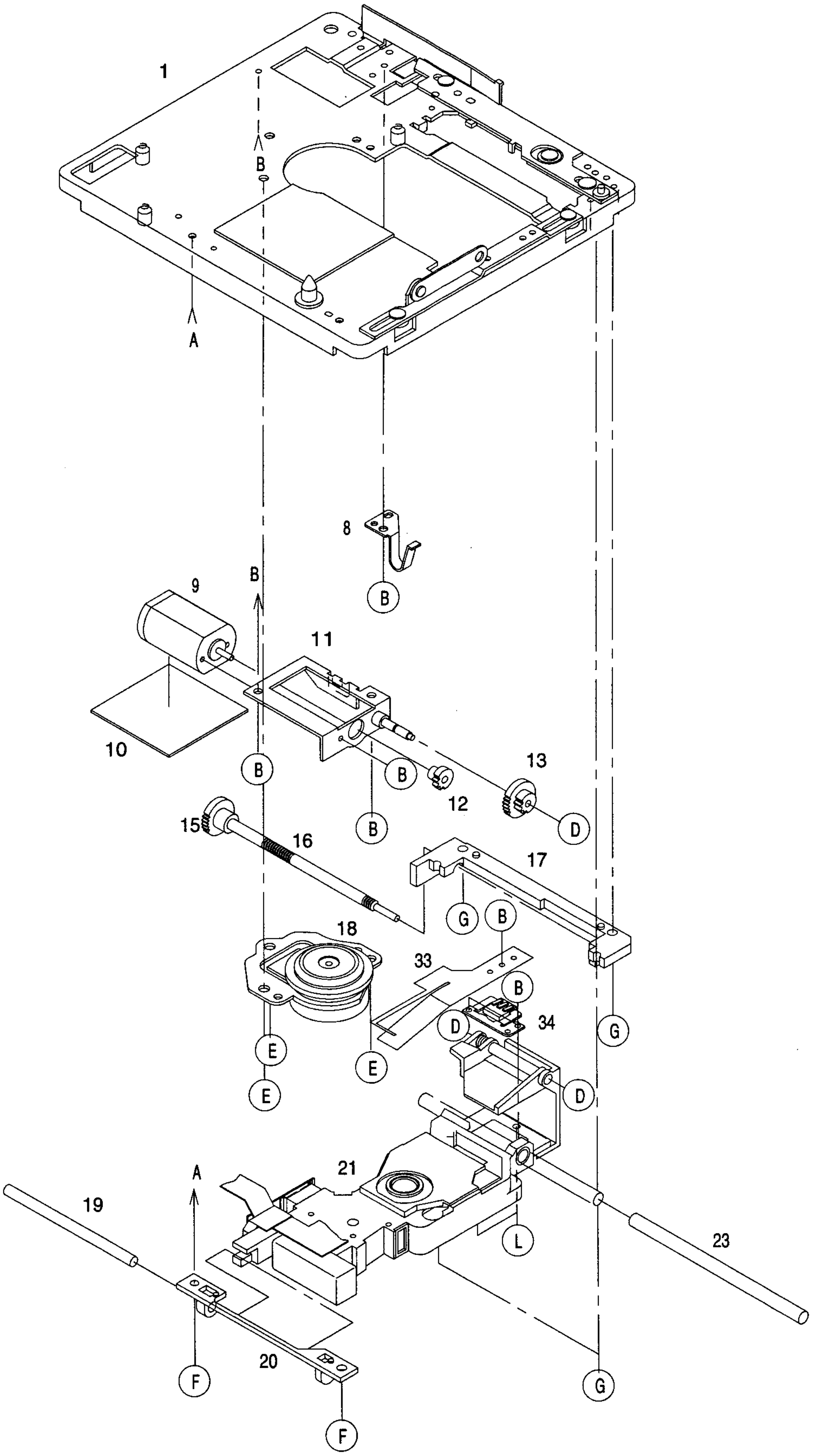
MD MECHANISM PARTS LIST 1/2

DESCRIPTIONで判断できない物は "REFERENCE NAME LIST" を参照してください。
If can't understand for Description please kindly refer to "REFERENCE NAME LIST".

REF. NO	PART NO.	KANRI NO.	DESCRIPTION
1	86-ZG2-226-210		GUIDE,EJECT
2	86-ZG2-250-410		HLDR ASSY,LOADING
3	86-ZG2-238-010		SPR-E,GUIDE EJECT
4	86-ZG2-213-410		LEVER,CTRG
5	86-ZG2-232-010		SPR-T,LVR CTRG
6	87-ZG6-606-010		FF-CABLE,8P 100M
7	86-ZG2-273-010		PLATE,HEAD N
8	86-ZG2-279-010		PLATE,ASSY REC N
9	86-ZG2-272-010		HLDR,MD R N
10	86-ZG2-270-010		SHAFT,2-30.3
11	85-NC1-208-110		SPR-C,MECHA F
12	86-ZG2-244-010		SPR-E,PLATE REC
13	86-ZG2-243-010		SPR-E,PLATE HEAD
14	86-ZG2-231-010		HLDR,MD F
15	86-ZG2-202-810		HLDR ASSY,CTRG
16	81-ZG1-212-010		PULLY,LOAD MO(*)
17	86-ZG2-225-110		LEVER,LOCK
18	86-ZG2-237-010		SPR-T,LVR LOCK
19	86-ZG2-229-110		GEAR,ASSIST
20	86-ZG2-230-010		GEAR,IDLE H
21	86-ZG2-228-010		GEAR,RELAY
22	86-ZG2-227-010		PULLEY,LOADING
23	86-ZG2-247-010		BELT,LOADING
24	86-ZG2-208-110		LEVER,LOADING R
25	86-ZG2-235-210		SPR-T,LVR LOADING R
26	86-ZG2-207-110		LEVER,LOADING L
27	86-ZG2-234-110		SPR-T,LVR LOADING L
28	86-ZG2-224-110		LEVER,OPEN
29	86-ZG2-206-010		RACK,LOADING R
30	86-ZG2-275-010		HLDR,RACK N
31	86-ZG2-205-110		RACK,LOADING L
32	85-NC1-212-110		SPR-C,MECHA R
33	84-ZG1-244-110		CABI,OPTICAL
34	86-ZG2-236-010		SPR-C,LVR OPEN
35	85-NC1-213-110		SPR-C,MECHA L
36	86-ZG2-201-510		CHAS,LOADING
37	86-ZG2-617-010		FF-CABLE,11P 0.5 100MM MECHA
38	86-ZG2-618-010		FF-CABLE,4P 2 20MM
39	86-CD0-614-110		FF-CABLE,8P 1.25 30MM
40	87-CE1-204-210		COVER,MD
41	85-NC1-207-010		DMPR,MECHA
42	87-ZG6-605-010		FF-CABLE,14P 1.0 230
A	86-ZG2-253-010		W-P,1.7-6-0.3B W/O ADH
B	87-067-359-010		S-SCREW,+1.4-2.5 CR BLK
C	87-067-659-010		BVTT+2.6-8 W/O SLOT SWCH BLK
D	87-342-036-210		UT2+2-8
E	87-B10-024-310		VT2+1.7-6 W/O
F	87-351-527-310		VT2+1.7-3
G	85-NC1-211-010		S-SCREW,MECHA
H	86-ZG2-276-010		W-P,1.76-4-0.3 SLIT
I	87-067-703-010		BVT2+3-10 W/O SLOT
K	87-741-035-410		UT2+2-6

MD MECHANISM EXPLODED VIEW 2/2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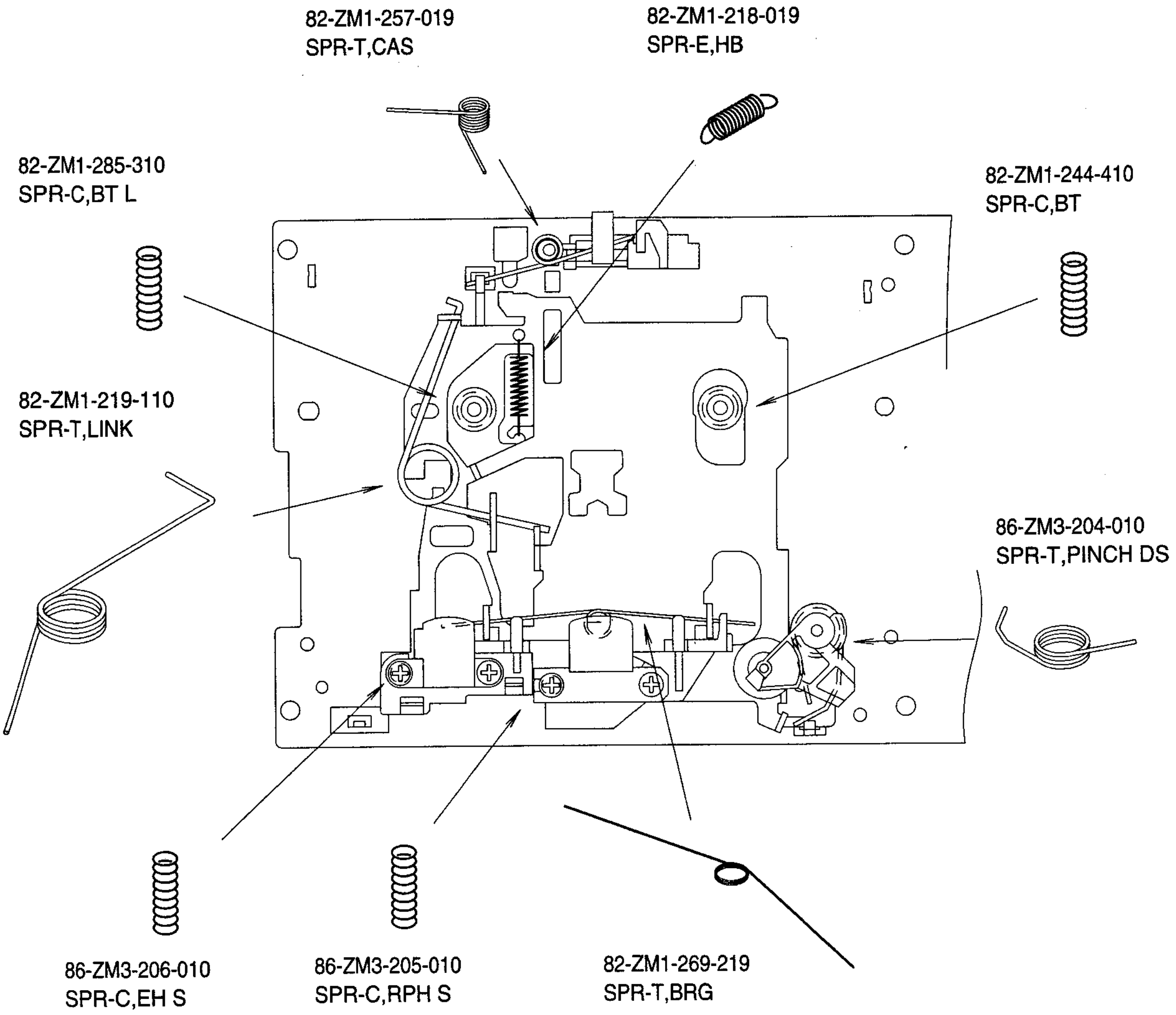
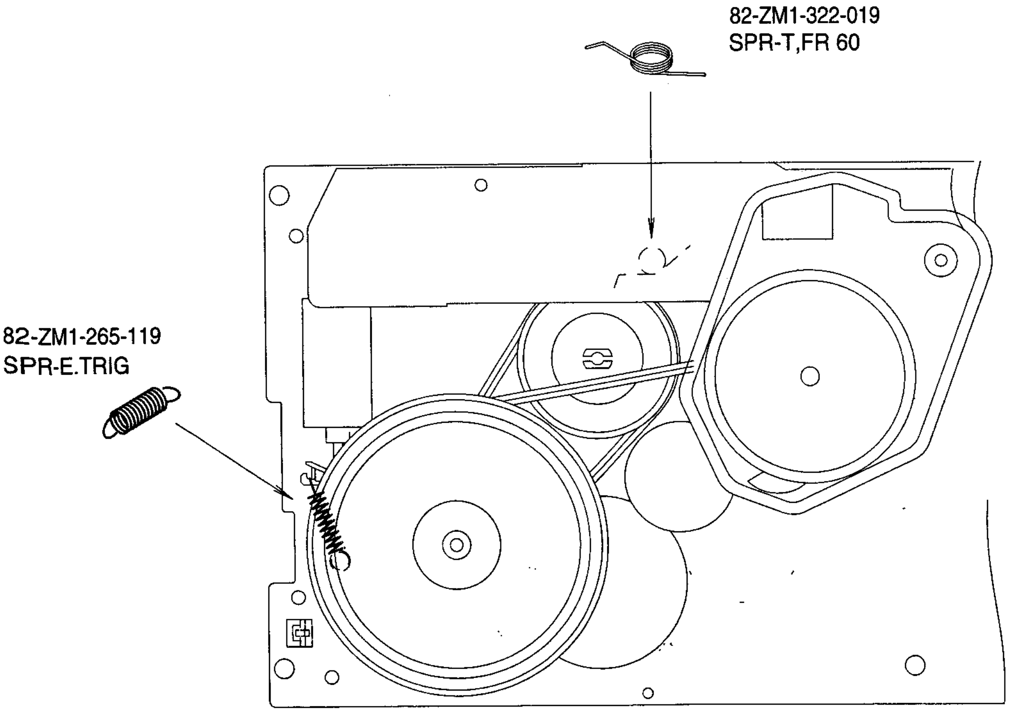
MD MECHANISM PARTS LIST 2/2

DESCRIPTIONで判断できない物は "REFERENCE NAME LIST" を参照してください。
If can't understand for Description please kindly refer to "REFERENCE NAME LIST".

REF. NO	PART NO.	KANRI NO.	DESCRIPTION
1	83-ZG5-290-010		CHAS,C ASSY
8	83-ZG5-265-010		SPR-P,GEAR P.U.
9	87-045-374-010		MOT,FFM20VK-7Z170
10	83-ZG5-277-010		SH,20-12-0.05
11	83-ZG5-261-010		HLDR,MOTOR P.U.ASSY
12	83-ZG5-268-010		GEAR,MOTOR P.U.
13	83-ZG5-267-010		GEAR,P.U.B
15	83-ZG5-266-010		GEAR,P.U.A
16	83-ZG5-254-110		SHAFT,PU GUIDE C
17	83-ZG5-253-110		HLDR,PU GUIDE B
18	87-045-373-110		MOT,SPINDOL
19	83-ZG5-250-010		SHAFT,P.U.GUIDE A
20	83-ZG5-252-110		HLDR,PU GUIDE A
21	83-ZG5-297-010		PICK UP ASSY,2
23	83-ZG5-251-010		SHAFT,P.U.GUIDE B
33	87-046-415-010		HEAD,RF320-74H
34	83-ZG5-247-110		SPR-P,INSERT ASSY
B	87-261-500-310		V+1.4-1.4 BLK(1)
D	87-078-123-010		PW,1.1-2.5-0.3 C
E	87-262-521-310		V+1.7-1.6 BLK
F	87-262-505-310		V+1.4-2.5 BLK(3)
G	87-262-507-310		V+1.4-3.0 BLK
L	87-262-523-310		V+1.7-2 BLK(3)

SPRING APPLICATION POSITION

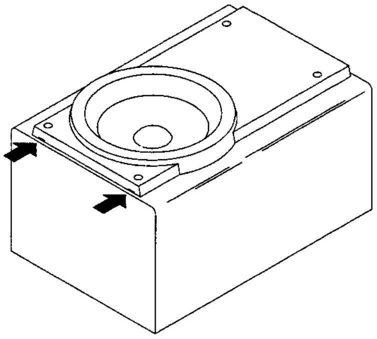

82-ZM1-257-019
SPR-T,CAS
82-ZM1-218-019
SPR-E,HB
82-ZM1-285-310
SPR-C,BT L
82-ZM1-244-410
SPR-C,BT
82-ZM1-219-110
SPR-T,LINK
86-ZM3-204-010
SPR-T,PINCH DS
86-ZM3-206-010
SPR-C,EH S
86-ZM3-205-010
SPR-C,RPH S
82-ZM1-269-219
SPR-T,BRG


82-ZM1-322-019
SPR-T,FR 60
82-ZM1-265-119
SPR-E.TRIG

DISASSEMBLY INSTRUCTIONS

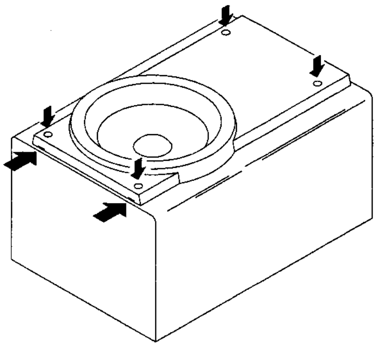
Type.1

Insert a flat-bladed screwdriver into the position indicated by the arrows and remove the panel. Remove the screws of each speaker unit andthen remove the speaker units.



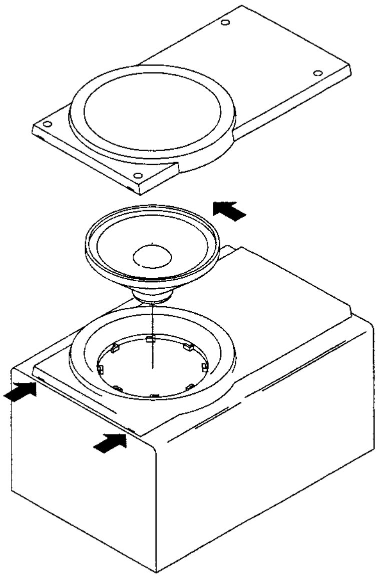
Type.2 (SX-NH3)

Remove the grill frame and four pieces of rubber caps by pulling out with a flat-bladed screwdriver. Remove the screws from hold where installed rubber caps. Insert a flat-bladed screwdriver into the position indicated by the arrows and remove the panel. Remove the screws of each speaker unit and then remove the speaker units.



Type.3

Insert a flat-bladed screwdriver into the position indicated by the arrows and remove the panel. Turn the speaker unit to counterclockwise direction while inserting a flat-bladed screwdriver into one of the hollows arround speaker unit, and then remove the speaker unit. After replacing the speaker unit, install it turnning to clockwise direction unit "click" sound comes out.



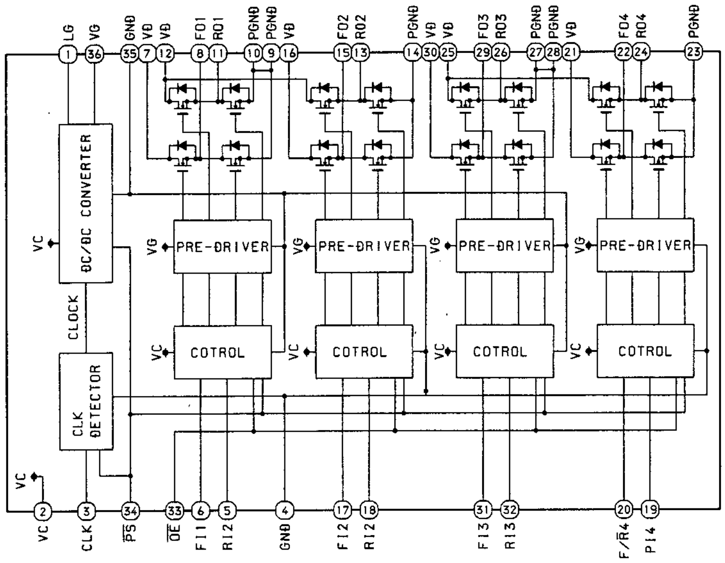
SPEAKER PARTS LIST (SX-NH3)

DESCRIPTIONで判断できない物は "REFERENCE NAME LIST" を参照してください。
If can't understand for Description please kindly refer to "REFERENCE NAME LIST".

REF. NO	PART NO.	KANRI NO.	DESCRIPTION
1	86-NS5-608-010		SPKR,W 140
2	87-NSY-003-010		PANEL,FR
3	87-NSY-004-010		GRILLE,FRAME ASSY
4	87-NSY-603-010		SPKR,TW 60
5	87-NSY-610-010		SPKR,CODE

IC BLOCK DIAGRAM-2

IC, MPC17A38ZVEL


LG
VG
GND
VD
VD
FO1
RO1
PGND
PGND
VD
FO2
RO2
PGND
VD
VD
FO3
RO3
PGND
PGND
VD
FO4
RO4
PGND
1
36
35
7
12
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11
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9
16
15
13
14
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25
29
26
27
28
21
22
24
23
DC/DC CONVERTER
VC
CLOCK
CLK DETECTOR
VC
VG
PRE-DRIVER
COTROL
2
3
34
33
6
5
4
17
18
31
32
20
19
VC
CLK
$\overline{PS}$
$\overline{OE}$
FI1
RI2
GND
FI2
RI2
FI3
RI3
F/$\overline{R}$4
PI4

CLOCK DETECTOR PART

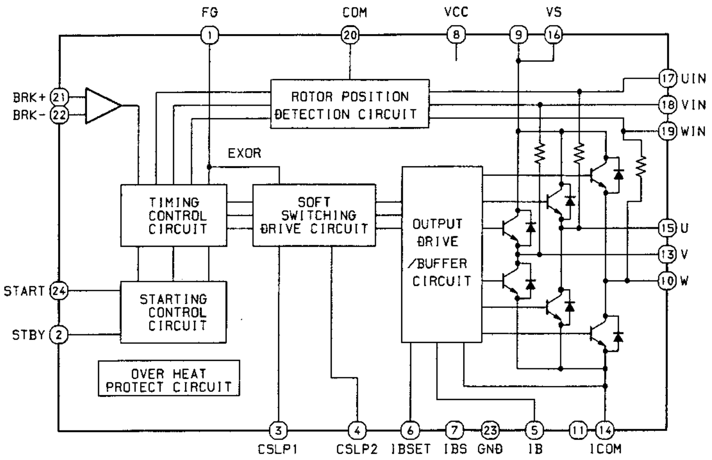
CLK	$\overline{PS}$	OSCILLATOR CIRCUIT
X	H	SELF-EXCIATION
1OLK	H	SYNCHRONIZATION
X	L	STOP

DRIVER PART

$\overline{PS}$, $\overline{OE}$		INPUT		OUTPUT1~3		OUTPUT4	
$\overline{PS}$	$\overline{OE}$	FI, F/$\overline{RI}$	RI, PI	FO	RO	FO	RO
H	L	L	L	L	L	L	L
H	L	L	H	L	H	L	H
H	L	H	L	H	L	L	L
H	L	H	H	L	L	H	L
H	H	X	X	L	L	L	L
L	X	X	X	Z	Z	Z	Z

❋ Z: HIGH IMPEDANCE
❋ $\overline{PS}$: ALL CIRCUIT STOP
❋ $\overline{OE}$: BRIDGE OUTPUT LOW

IC, CXA8027N


FG
COM
VCC
VS
1
20
8
9
16
17 UIN
18 VIN
19 WIN
BRK+ 21
BRK- 22
ROTOR POSITION DETECTION CIRCUIT
EXOR
TIMING CONTROL CIRCUIT
SOFT SWITCHING DRIVE CIRCUIT
OUTPUT DRIVE /BUFFER CIRCUIT
15 U
13 V
10 W
START 24
STBY 2
STARTING CONTROL CIRCUIT
OVER HEAT PROTECT CIRCUIT
3 CSLP1
4 CSLP2
6 IBSET
7 IBS
23 GND
5 IB
11
14 ICOM

ACCESSORIES LIST

DESCRIPTIONで判断できない物は "REFERENCE NAME LIST" を参照してください。
If can't understand for Description please kindly refer to "REFERENCE NAME LIST".

REF. NO	PART NO.	KANRI NO.	DESCRIPTION
1	87-006-225-010		AM LOOP ANT NC2
2	87-043-115-010		ANT,FEEDER FM
3	87-NB7-903-010		IB,U(ESF)I
4	87-NB7-651-010		RC UNIT,RC-7AS08

REFERENCE NAME LIST

ELECTRICAL SECTION

DESCRIPTION	REFERENCE NAME
ANT	ANTENNAS
C-	CHIP
C-CAP	CAP, CHIP
C-CAP TN	CAP, CHIP TANTALUM
C-COIL	COIL, CHIP
C-DI	DIODE, CHIP
C-DIODE	DIODE, CHIP
C-FET	FET, CHIP
C-FOTR	FILTER, CHIP
C-JACK	JACK, CHIP
C-LED	LED, CHIP
C-RES	RES, CHIP
C-SFR	SFR, CHIP
C-SLIDE SW	SLIDE SWITCH, CHIP
C-SW	SWITCH, CHIP
C-TR	TRANSISTOR, CHIP
C-VR	VOLUME, CHIP
C-ZENER	ZENER, CHIP
CAP, CER	CAP, CERA-SOL
CAP, E	CAP, ELECT
CAP, M/F	CAP, FILM
CAP, TC	CAP, CERA-SOL
CAP, TC-U	CAP, CERA-SOL SS
CAP, TN	CAP, TANTALUM
CERA FIL	FILTER, CERAMIC
CF	FILTER, CERAMIC
DL	DELAY LINE
E/CAP	CAP, ELECT
FILT	FILTER
FLTR	FILTER
FUSE RES	RES, FUSE
MOT	MOTOR
P-DIODE	PHOTO DIODE
P-SNSR	PHOTO SENSER
P-TR	PHOTO TRANSISTOR
POLY VARI	VARIABLE CAPACITOR
PPCAP	CAP, PP
PT	POWER TRANSFORMER
PTR, RES	PTR, MELF
RC	REMOTE CONTROLLER
RES NF	RES, NON-FLAMMABLE
RESO	RESONATOR
SHLD	SHIELD
SOL	SOLENOID
SPKR	SPEAKER
SW, LVR	SWITCH, LEVER
SW, RTRY	SWITCH, ROTARY
SW, SL	SWITCH, SLIDE
TC CAP	CAP, CERA-SOL
THMS	THERMISTOR
TR	TRANSISTOR
TRIMMER	CAP, TRIMMER
TUN-CAP	VARIABLE CAPACITOR
VIB, CER	RESONATOR, CERAMIC
VIB, XTAL	RESONATOR, CRYSTAL
VR	VOLUME
ZENER	DIODE, ZENER

MECHANICAL SECTION

DESCRIPTION	REFERENCE NAME
ADHESHIVE	SHEET ADHESHIVE
AZ	AZIMUTH
BAR-ANT	BAR-ANTENNA
BAT	BATTERY
BATT	BATTERY
BRG	BEARING
BTN	BUTTON
CAB	CABINET
CASS	CASSETTE
CHAS	CHASSIS
CLR	COLLAR
CONT	CONTROL
CRSR	CURSOR
CU	CUSHION
CUSH	CUSHION
DIR	DIRECTION
DUBB	DUBBING
FL	FRONT LOADING
FLY-WHL	FLYWHEEL
FR	FRONT
FUN	FUNCTION
G-CU	G-CUSHION
HDL	HANDOL
HIMERON	CLOTH
HINGE, BAT	HINGE, BATTERY
HLDR	HOLDER
HT-SINK	HEAT SINK
IB	INSTRUCTION BOOKLET
IDLE	IDLER
IND, L-R	INDICATOR, L-R
KEY, CONT	KEY, CONTROL
KEY, PRGM	KEY, PROGRAM
KNOB, SL	KNOB, SLIDE
LBL	LABEL
LID, BATT	LID, BATTERY
LID, CASS	LID, CASSETTE
LVR	LEVER
P-SP	P-SPRING
PANEL, CONT	PANEL, CONTROL
PANEL, FR	PANEL, FRONT
PRGM	PROGRAM
PULLY, LOAD MO	PULLY, LOAD MOTOR
RBN	RIBBON
S-	SPECIAL
SEG	SEGMENT
SH	SHEET
SHLD-SH	SHIELD-SHEET
SL	SLIDE
SP	SPRING
SP-SCREW	SPECIAL-SCREW
SPACER, BAT	SPACER, BATTERY
SPR	SPRING
SPR-P	P-SPRING
SPR-PC-PUSH	P-SPRING, C-PUSH
T-SP	T-SPRING
TERM	TERMINAL
TRIG	TRIGGER
TUN	TUNING
VOL	VOLUME
W	WASHER
WHL	WHEEL
WORM-WHL	WORM-WHEEL

サービス技術ニュース	
番号	連絡内容
G—　—	
G—　—	
G—　—	

アイワ株式会社

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Tokyo Japan

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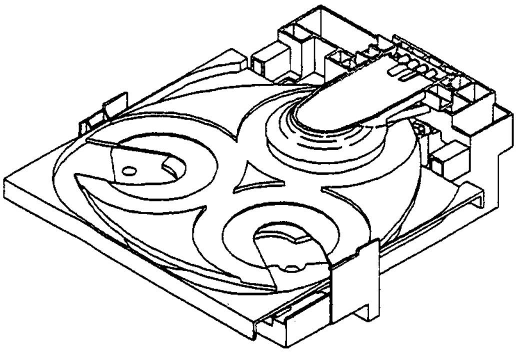
aiwa

V18295

aiwa SERVICE

4ZG-1Z



CD MECHANISM

• BASIC CD MECHANISM: KSM-2 131 BAM / 3ZG-2C7N

•TYPE: English,Japanese

BASIC NAME	DERIVATION NAME							
4ZG-1Z	1D	2D	1MD	–		–	–	–

S/M Code No. 09-973-187-50T (Service Manual)
S/M Code No. 09-984-270-60T (Correction)

SERVICE MANUAL

安全に修理(補修)をするために

修理の前に「安全に修理(補修)をするために」をよくお読みの上、正しく修理を行ってください。このサービスマニュアルでは、お客様が製品を安全に正しくお使いいただき、お客様や他の人々への危害や財産への損害を未然に防止するために、修理する場合必ず下記の項目をお守りください。

⚠警告

警告に示された次の内容を必ずお守りください。

☞もし守られないと、火災や感電、けがなどの重度の損害を負う原因となります。

1.⚠安全規格部品注意文

・製品の安全性を維持する為の重要部品で、安全上特別な規格で作られています。

このマークの部品を交換する時は必ず指定の部品を使用してください。

2.指定部品を使用すること。

セットの部品は難燃性や耐電圧など安全上の特性を持ったものとなっています。従って交換部品は、使用されていたものと同じ特性の部品を使用すること。特に回路図、部品表に⚠印で指定されている安全上重要な部品は必ず指定のものをご使用ください。

3.電源コードを含むＡＣ1次側のリード線の被覆を傷つけたり、溶かしたりしないこと。

4.感電に注意すること。

内部には高電圧の部分がありますので通電時の取り扱いに際しては注意してください。

5.次の各項目は修理前と必ず同じであること。

1）ワイヤーの半田付け状態（特にＡＣ1次側の空間距離）

2）ワイヤーの引き回しおよび束線状態等

3）ワイヤーの種類

4）各種絶縁物の取付状態

7.部品の取り付けや配線の引き回しはもとどおりにすること。

安全上、チューブやテープなどの絶縁材料を使用したり、プリント基板から浮かしてとりつけた部品があります。また、内部配線は引き回しやクランパーによって発熱部品や高圧部品に接近しないよう配慮されていますので、これらは必ずもとどおりにすること。

⚠注意

この表示を無視して、誤った取り扱いをすると、人が傷害を負ったり物的損害が発生する可能性があります。

1.注意事項を守ること。

サービスの時特に注意を要する箇所につきましては、キャビネット、シャーシ、部品などにラベルや捺印で注意事項を表示しています。これらの注意書きおよび取扱説明書等の注意事項を必ず守ること。

2.スペック銘板・注意ラベル・ヒューズラベル等の表示文字を汚して読みにくくならないこと。

3.基板パターンの裏付け部品の修理等を行う場合、パターンや部品にボンドを塗布してプリント基板にしっかり固定すること。

4.サービス後は安全点検すること。

サービスのために取り外したネジ、部品、配線がもとどおりになっているか、サービスした個所の周辺を劣化させてしまったところがないかなどを点検すること。（ワイヤーの半田付け、引き回し、束線、種類、空間距離）

5.修理（補修）時に、レーザー出力部に接近しないでください。やむなく接近する場合は、目を閉じてください。レーザービームに接近することが必要になった場合、光学ピックアップブロックの対物レンズの表面から30cm以上離れていることを確認してください。

ギヤ、メインカムの位相の合わせ方

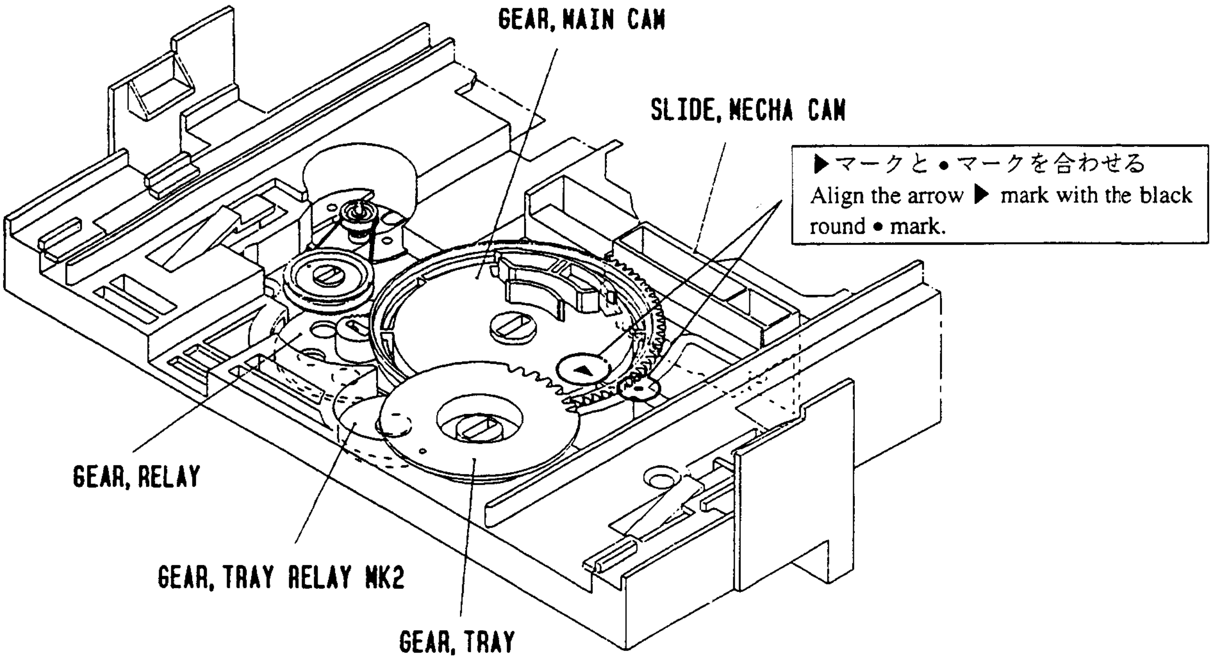
1) CHAS, MECHのツメを下側に押し、TRAYを外す。
2) 下図の様にGEAR, MAIN CAMの矢印とCHAS, MECHAの点印を合わせる。
3) SLIDE, MECH CAMが右側の位置にある事を確認し、TRAYをゆっくり挿し込んで下さい。

注意: GEAR, MAIN CAMの位相がズレている場合、チャッキング及びトレーが誤動作を起こします。

How to Adjust the Rotating Phase of the Gear, Main Cam

1) Push down the hooking catch of the CHAS. MECH, and remove the TRAY.
2) Align the arrow mark of the Gear, Main Cam with the black round mark of the CHAS, MECHA as shown below.
3) Confirm that the Slide, Mech Cam is located in the right position, then insert the TRAY gently.

Caution: If the rotating phase of the Gear, Main Cam is incorrectly adjusted, the chucking operation and tray movement will have malfunction.


GEAR, MAIN CAM
SLIDE, MECHA CAM
▶マークと●マークを合わせる
Align the arrow ▶ mark with the black round ● mark.
GEAR, RELAY
GEAR, TRAY RELAY MK2
GEAR, TRAY

光学ブロック (KSS-213B) 交換時の注意

光学系ブロック内のレーザーダイオードは、衣服や人体に帯電した静電荷等で電位差を生じることにより、静電破壊することがあります。人体アース、作業台のアースをとり、衣服が触れぬよう注意して下さい。

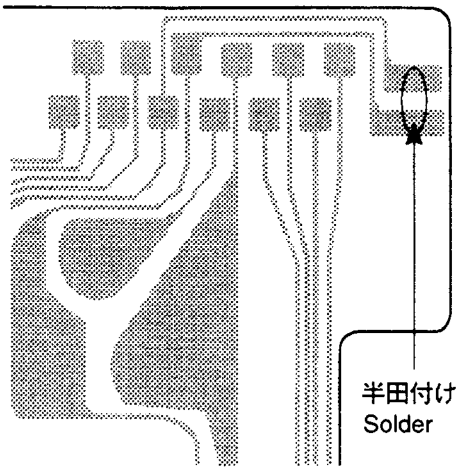
1) コネクターを接続後、右図に示すハンダ付けを取り除いて下さい。

Precaution to replace Optical block (KSS-213B)

Body or clothes electrostatic potential could ruin laser diode in the optical block. Be sure ground body and workbench, and use care the clothes do not touch the diode.

1) After the connection, remove solder shown in the right figure.

PICK-UP Assy P.C.B


半田付け
Solder

ELECTRICAL MAIN PARTS LIST

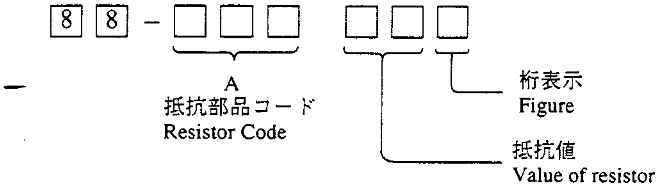
DESCRIPTIONで判断できない物は“REFERENCE NAME LIST”を参照してください。
If can't understand for Description please kindly refer to "REFERENCE NAME LIST".

REF. NO	PART NO.	カンリ NO.	DESCRIPTION
IC			
	87-A20-446-010	1E	C-IC,LA9241ML
	87-A20-459-010	2A	C-IC,LC78622ED
	87-A20-445-010	1F	IC,BA5936
TRANSISTOR			
	87-A30-066-080	0E	TR,2SA1175FE
	87-A30-076-080	0E	C-TR,2SC3052F
	87-A30-047-080	0E	TR,CSD655E
	87-026-609-080	0E	TR,KTA1266GR
	87-A30-073-080	0E	C-TR,RT1N 141C
	87-A30-039-040	0E	C-TR,2SD1383K<1MD>
DIODE			
	87-002-564-080	0E	DIODE,1SS133-RA
3CD C.B			
	84-ZG1-244-210	1A	CABI,OPTICAL
C11	87-012-393-080	0E	C-CAP,S 0.22-16 K W5R CM/CB
C12	87-012-157-080	0E	C-CAP,S 330P-50 J CH GRM
C13	87-016-369-080	0E	C-CAP,S 0.033-25 K B
C14	87-A10-201-080	0E	C-CAP,S 0.33-16 K B
C15	87-010-590-080	0E	C-CAP,S 0.015-16 K R
C16	87-016-369-080	0E	C-CAP,S 0.033-25 K B
C17	87-010-181-080	0E	C-CAP,S 1800P-50 K B
C18	87-016-369-080	0E	C-CAP,S 0.033-25 K B
C19	87-010-198-080	0E	C-CAP,S 0.022-25 K B
C20	87-010-178-080	0E	C-CAP,S 1000P-50 K B
C21	87-012-393-080	0E	C-CAP,S 0.22-16 K W5R CM/CB
C22	87-016-083-080	0E	C-CAP,S 0.15-16 K R
C23	87-010-197-080	0E	C-CAP,S 0.01-25 K B
C24	87-010-186-080	0E	C-CAP,S 4700P-50 K B
C25	87-010-400-040	0E	CAP,E 0.47-50 SME
C26	87-010-322-080	0E	C-CAP,S 100P-50 J CH
C27	87-010-382-040	0E	CAP,E 22-25 SME
C28	87-010-403-040	0E	CAP,E 3.3-50 SME
C29	87-010-184-080	0E	C-CAP,S 3300P-50 K B
C30	87-010-146-080	0E	C-CAP,S 2P-50 C CH GRM
C31	87-010-186-080	0E	C-CAP,S 4700P-50 K B
C32	87-010-152-080	0E	C-CAP,S 8P
C33	87-016-081-080	0E	C-CAP,S 0.1-16 K R
C35	87-010-196-080	0E	C-CAP,S 0.1-25 Z F C2012
C37	87-010-405-080	0E	CAP,E 10-50 M SME
C38	87-010-263-080	0E	CAP,E 100-10 SME
C39	87-016-369-080	0E	C-CAP,S 0.033-25 K B
C40	87-010-401-080	0E	CAP,E 1-50 M SME
C41	87-A10-201-080	0E	C-CAP,S 0.33-16 K B
C42	87-010-263-080	0E	CAP,E 100-10 SME
C43	87-010-197-080	0E	C-CAP,S 0.01-25 K B
C44	87-010-263-080	0E	CAP,E 100-10 SME
C46	87-010-196-080	0E	C-CAP,S 0.1-25 Z F C2012
C47	87-010-260-080	0E	CAP,E 47-25 SME
C48	87-010-196-080	0E	C-CAP,S 0.1-25 Z F C2012
C49	87-010-404-080	0E	CAP,E 4.7-50 M SME
C50	87-010-197-080	0E	C-CAP,S 0.01-25 K B
C51	87-010-263-040	0E	CAP,E 100-10 M SME
C101	87-016-081-080	0E	C-CAP,S 0.1-16 K R
C102	87-016-081-080	0E	C-CAP,S 0.1-16 K R
C103	87-010-321-080	0E	C-CAP,S 82P-50 J CH
C104	87-012-154-080	0E	C-CAP,S 150P-50 J CH GRM
C105	87-010-196-080	0E	C-CAP,S 0.1-25 Z F C2012
C109	87-010-197-080	0E	C-CAP,S 0.01-25 K B
C111	87-010-312-080	0E	C-CAP,S 15P
C112	87-010-154-080	0E	C-CAP,S 10P-50 D CH
C113	87-010-322-080	0E	C-CAP,S 100P-50 J CH
C115	87-010-404-080	0E	CAP,E 4.7-50 M SME
C116	87-010-196-080	0E	C-CAP,S 0.1-25 Z F C2012
C117	87-010-263-040	0E	CAP,E 100-10 M SME
C118	87-010-178-080	0E	C-CAP,S 1000P-50 K B
C119	87-010-154-080	0E	C-CAP,S 10P-50 D CH
C121	87-010-405-080	0E	CAP,E 10-50 M SME
C122	87-010-405-080	0E	CAP,E 10-50 M SME
C123	87-012-157-080	0E	C-CAP,S 330P-50 J CH GRM
C124	87-012-157-080	0E	C-CAP,S 330P-50 J CH GRM
C131	87-010-382-080	0E	CAP,E 22-25 M SME
C191	87-010-263-040	0E	CAP,E 100-10 M SME
C301	87-010-196-080	0E	C-CAP,S 0.1-25 Z F C2012
C302	87-010-382-080	0E	CAP,E 22-25 M SME
C501	87-010-381-080	0E	CAP,E 330-16 SME
C502	87-010-197-080	0E	C-CAP,S 0.01-25 K B
C504	87-010-196-080	0E	C-CAP,S 0.1-25 Z F C2012
C505	87-010-196-080	0E	C-CAP,S 0.1-25 Z F C2012
C506	87-010-196-080	0E	C-CAP,S 0.1-25 Z F C2012
C507	87-010-196-080	0E	C-CAP,S 0.1-25 Z F C2012
C509	87-010-196-080	0E	C-CAP,S 0.1-25 Z F C2012
C510	87-010-196-080	0E	C-CAP,S 0.1-25 Z F C2012
C603	87-010-196-080	0E	C-CAP,S 0.1-25 Z F C2012
C610	87-010-405-080	0E	CAP,E 10-50 M SME
C611	87-010-405-080	0E	CAP,E 10-50 M SME
C701	87-010-405-080	0E	CAP,E 10-50 M SME
C705	87-010-197-080	0E	C-CAP,S 0.01-25 K B
C706	87-010-196-080	0E	C-CAP,S 0.1-25 Z F C2012
C711	87-010-322-080	0E	C-CAP,S 100P-50 J CH
C712	87-010-322-080	0E	C-CAP,S 100P-50 J CH
C713	87-010-322-080	0E	C-CAP,S 100P-50 J CH
C721	87-010-322-080	0E	C-CAP,S 100P-50 J CH
C901	87-010-260-080	0E	CAP,E 47-25 SME
C902	87-010-196-080	0E	C-CAP,S 0.1-25 Z F C2012
CON3	84-ZG1-648-010	1A	CONN ASSY,6P<1MD,1D>
FC1	85-NFT-611-110	1A	FF-CABLE 16P-1.0
FC4	84-ZG1-614-210	1A	F-CABLE,5P 1.25 210MM
FC5	84-ZG1-630-010	0E	CABLE FFC 6P-1.25<2D>
L11	87-005-602-080	0E	COIL,10UH J LAV35
L101	87-005-614-080	0E	COIL,100UH
L102	87-005-602-080	0E	COIL,10UH J LAV35
LED901	87-A40-123-010	0E	LED,SLZ-8128A-01-B
M601	87-045-305-010	1D	MOT,RF-500TB
SW701	87-036-109-010	0E	SW,MICRO SPPB61
SW702	87-036-109-010	0E	SW,MICRO SPPB61
X101	87-A70-046-010	--	VIB,XTAL 16.934MHZ
LED C.B			
LED701	87-A40-316-080	0E	LED,SLR-56PCT31 GRN
LED702	87-A40-268-080	0E	LED,SLH-56DCT31 ORN
LED703	87-A40-268-080	0E	LED,SLH-56DCT31 ORN
LED704	87-A40-316-080	0E	LED,SLR-56PCT31 GRN
T-T C.B			
C401	87-018-214-080	0E	CAP,TC U 0.1-50 Z F SA
M401	87-045-364-010	1D	MOT,BCH3B
PS401	87-026-573-010	1B	SNSR,PHOTO GP1S53
MOTOR C.B<1MD,1D>			
M2	9X-262-513-210	2M	SLED MOTOR ASSY<1MD,1D>
PIN3	91-564-722-110	1C	CONNECTOR 6P<1MD,1D>
SW1	91-572-085-110	1B	LEAF SW<1MD,1D>

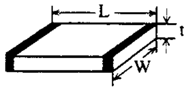
REF. NO	PART NO.	カンリ NO.	DESCRIPTION
DRIVE C.B<2D>			
M1	87-045-358-010	1F	MOT,RF-310TA 43<2D>
M2	87-045-356-010	1F	MOT,RF-310TA 30<2D>
SW1	87-A90-042-010	0E	SW,LEAF MSW-17310MVPO<2D>

○ チップ抵抗部品コード／CHIP RESISTOR PART CODE

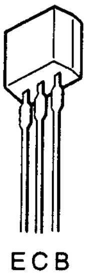
チップ抵抗部品コードの成り立ち
Chip Resistor Part Coding


8 8 - □□□ □□□
A
抵抗部品コード
Resistor Code
桁表示
Figure
抵抗値
Value of resistor

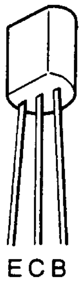
チップ抵抗
Chip resistor

容量 Wattage	種類 Type	許容誤差 Tolerance	記号 Symbol	寸法／Dimensions (mm)				抵抗コード ：A Resistor Code: A
				外形／Form	L	W	t	
1／16W	1608	±5%	CJ		1.6	0.8	0.45	108
1／10W	2125	±5%	CJ		2	1.25	0.45	118
1／8W	3216	±5%	CJ		3.2	1.6	0.55	128

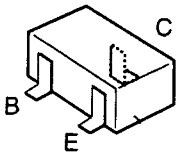
TRANSISTOR ILLUSTRATION



2SA1175

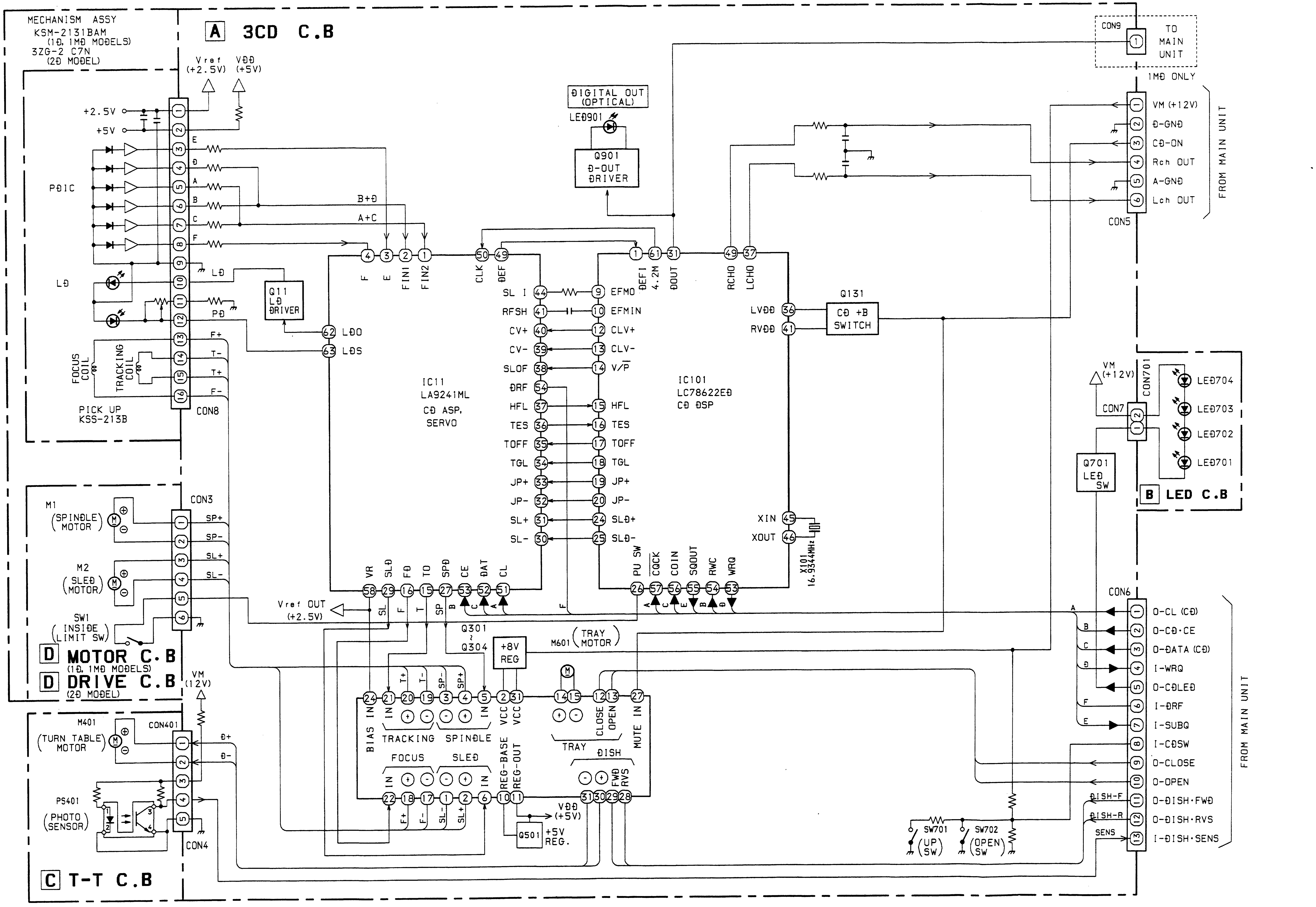


CSD655
KTA1266

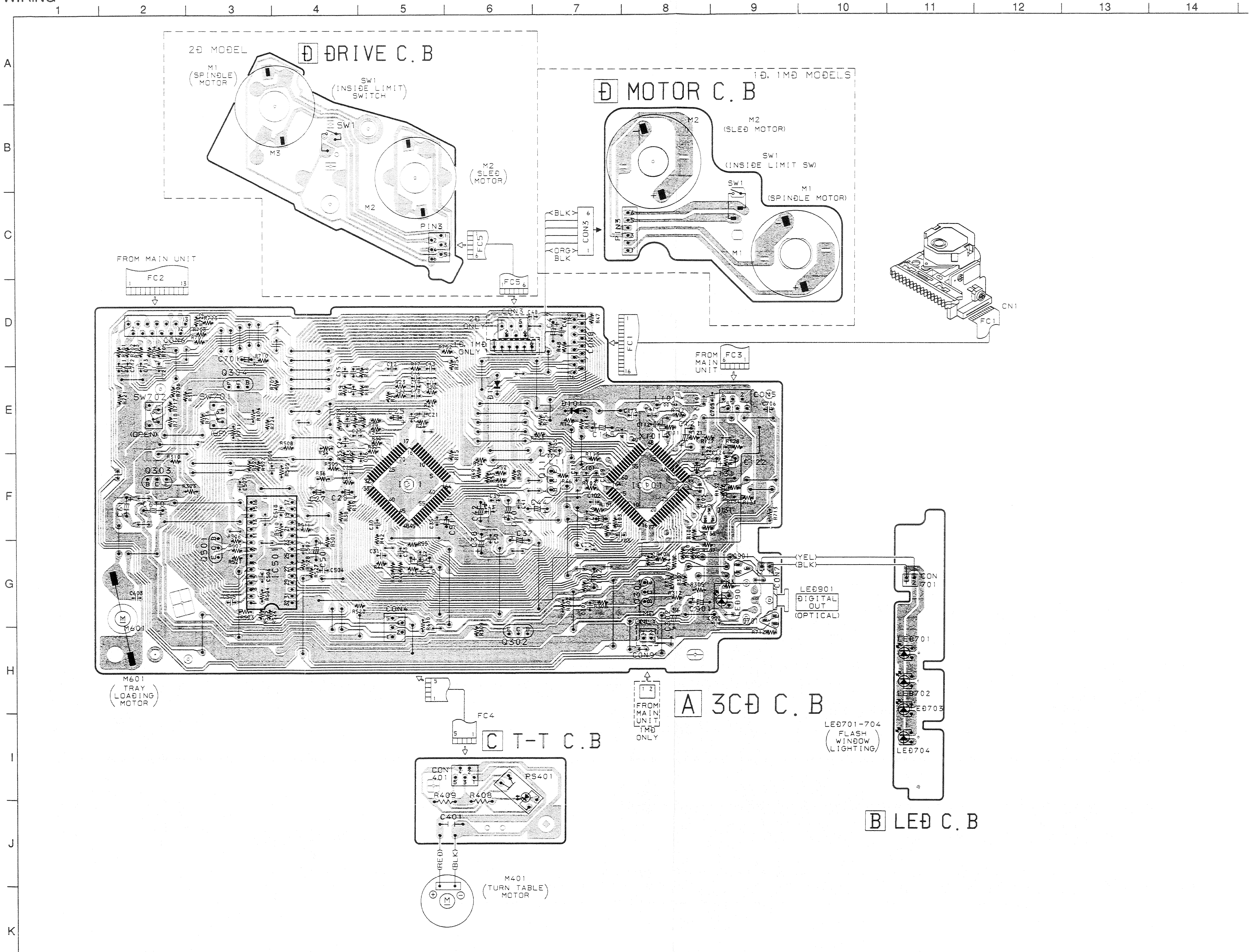


2SC3052
2SD1383
RT1N141C

BLOCK DIAGRAM



MECHANISM ASSY
KSM-2131BAM
(1Đ, 1MĐ MODELS)
3ZG-2 C7N
(2Đ MODEL)
A 3CD C.B
Vref (+2.5V)
VĐĐ (+5V)
+2.5V
+5V
PĐIC
LĐ
PĐ
FOCUS COIL
TRACKING COIL
PICK UP
KSS-213B
CON8
Q11
LĐ DRIVER
LĐO
LĐS
B+Đ
A+C
F
E
FIN1
FIN2
CLK
ĐEF
IC11
LA9241ML
CĐ ASP,
SERVO
SL I
RFSH
CV+
CV-
SLOF
ĐRF
HFL
TES
TOFF
TGL
JP+
JP-
SL+
SL-
VR
SLĐ
FĐ
TO
SPĐ
CE
ĐAT
CL
EFMO
EFMIN
CLV+
CLV-
V/P
SLĐ+
SLĐ-
ĐEFI
4.2M
ĐOUT
RCHO
LCHO
IC101
LC78622EĐ
CĐ ĐSP
LVĐĐ
RVĐĐ
XIN
XOUT
X101
16.9344MHz
PU SW
CQCK
COIN
SQOUT
RWC
WRQ
ĐIGITAL OUT (OPTICAL)
LEĐ901
Q901
Đ-OUT DRIVER
Q131
CĐ +B SWITCH
CON9
TO MAIN UNIT
1MĐ ONLY
VM (+12V)
Đ-GNĐ
CĐ-ON
Rch OUT
A-GNĐ
Lch OUT
CON5
FROM MAIN UNIT
VM (+12V)
CON701
CON7
LEĐ704
LEĐ703
LEĐ702
LEĐ701
Q701
LEĐ SW
B LED C.B
CON6
O-CL (CĐ)
O-CĐ·CE
O-ĐATA (CĐ)
I-WRQ
O-CĐLEĐ
I-ĐRF
I-SUBQ
I-CĐSW
O-CLOSE
O-OPEN
O-ĐISH·FWĐ
O-ĐISH·RVS
I-ĐISH·SENS
ĐISH-F
ĐISH-R
SENS
FROM MAIN UNIT
M1
(SPINĐLE MOTOR)
M2
(SLEĐ MOTOR)
SW1
(INSIĐE LIMIT SW)
CON3
SP+
SP-
SL+
SL-
D MOTOR C.B
(1Đ, 1MĐ MODELS)
D DRIVE C.B
(2Đ MODEL)
Vref OUT (+2.5V)
Q301
~
Q304
+8V REG
M601 (TRAY MOTOR)
BIAS IN
TRACKING
SPINĐLE
FOCUS
SLEĐ
VCC
REG-BASE
REG-OUT
TRAY
ĐISH
CLOSE
OPEN
MUTE IN
FWĐ
RVS
VĐĐ (+5V)
Q501
+5V REG.
SW701 (UP SW)
SW702 (OPEN SW)
VM (12V)
M401
(TURN TABLE MOTOR)
CON401
PS401
(PHOTO SENSOR)
CON4
C T-T C.B


1
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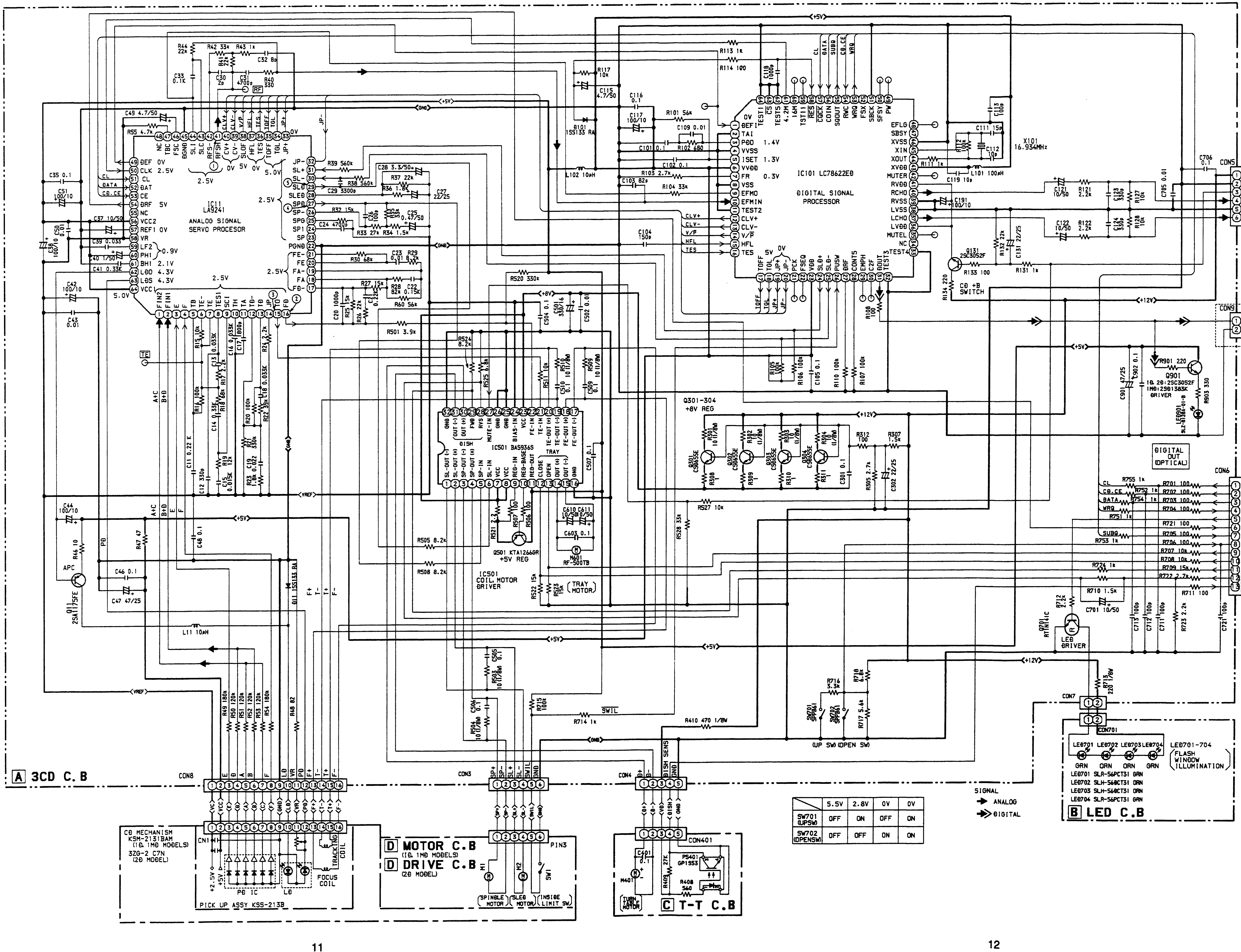
12
13
14
A
B
C
D
E
F
G
H
I
J
K
2Ð MODEL
Ð ÐRIVE C.B
M1 (SPINÐLE MOTOR)
SW1 (INSIÐE LIMIT SWITCH)
SW1
M3
M2 (SLEÐ MOTOR)
M2
PIN3
FC5
1Ð, 1MÐ MODELS
Ð MOTOR C.B
M2
M2 (SLEÐ MOTOR)
SW1 (INSIÐE LIMIT SW)
SW1
M1 (SPINÐLE MOTOR)
M1
PIN3
BLK
ORG
BLK
CON3
CN1
FC1
FROM MAIN UNIT
FC2
CON3
2Ð ONLY
1Ð, 1MÐ ONLY
CON6
CON8
FROM MAIN UNIT
FC3
CON5
C701
Q304
SW702
SW701
(OPEN)
Q303
IC1
IC101
Q501
IC501
X101
D101
Q101
CON4
CON7
CON9
Q302
Q301
Q901
LEÐ901
ÐIGITAL OUT (OPTICAL)
(YEL)
(BLK)
CON 701
M601
M601 TRAY LOAÐING MOTOR
FC4
FROM MAIN UNIT 1MÐ ONLY
A 3CÐ C.B
C T-T C.B
CON 401
PS401
R409
R408
C401
(REÐ)
(BLK)
M401 (TURN TABLE MOTOR)
LEÐ701
LEÐ702
LEÐ703
LEÐ704
LEÐ701-704 FLASH WINÐOW LIGHTING
B LEÐ C.B

SCHEMATIC DIAGRAM

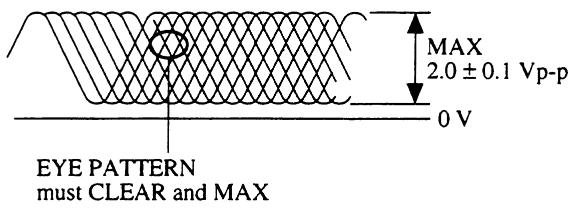

IC11 LA9241 ANALOG SIGNAL SERVO PROCESOR
IC101 LC78622ED DIGITAL SIGNAL PROCESSOR
X101 16.934MHz
IC501 BA5936S COIL MOTOR DRIVER
Q501 KTA1266GR +5V REG
Q301-304 +8V REG
Q131 2SC3052F CD +B SWITCH
Q901 1D 2D:2SC3052F 1MD:2SD1383K DRIVER
Q11 2SA1175FE APC
M601 RF-500TB (TRAY MOTOR)
Q701 RT1N141C LED DRIVER
DIGITAL OUT (OPTICAL)
LED901 SLZ-918A-01-D
CON5 VM (+12V) D-GND CD ON R CH A-GND L CH FROM MAIN UNIT
CON9 TO MAIN UNIT 1MD ONLY
CON6 O-CL CD O-CDCE O-DATA CD I-WRQ O-CDLED I-DRF I-SUBQ I-CDSW O-CLOSE O-OPEN O-DISH FWD O-DISH RVS I-DISH SENS FROM MAIN UNIT
SW701 SPPB61 SW702 SPPB61 (UP SW) (OPEN SW)
CON7 CON701
LED701 LED702 LED703 LED704 GRN ORN ORN GRN
LED701-704 (FLASH WINDOW ILLUMINATION)
LED701 SLR-56PCT31 GRN
LED702 SLR-56PCT31 ORN
LED703 SLR-56PCT31 ORN
LED704 SLR-56PCT31 GRN
B LED C.B
A 3CD C.B
CON8 CON3 CON4
CD MECHANISM KSM-2131BAM (1D, 1MD MODELS) 3ZG-2 C7N (2D MODEL)
CN1 PD IC LD TRACKING COIL FOCUS COIL
PICK UP ASSY KSS-213B
D MOTOR C.B (1D, 1MD MODELS)
D DRIVE C.B (2D MODEL)
PIN3 M1 M2 SW1 (SPINDLE MOTOR) (SLED MOTOR) (INSIDE LIMIT SW)
CON401 PS401 GP1S53 M401 (TURN TABLE MOTOR)
C T-T C.B
SIGNAL ANALOG DIGITAL

	5.5V	2.8V	0V	0V
SW701 (UPSW)	OFF	ON	OFF	ON
SW702 (OPENSW)	OFF	OFF	ON	ON

WAVE FORM

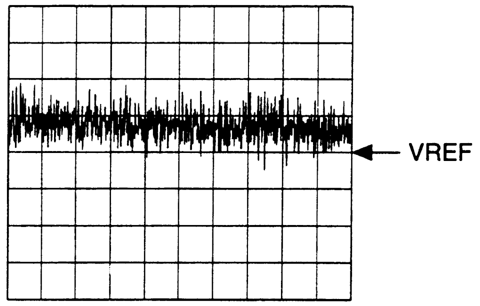
① IC11 Pin ㊶ (RFSM)

VOLT/DIV: 0.5V
TIME/DIV: 1μS



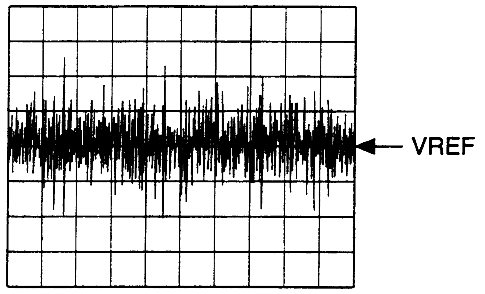
② IC11 Pin ⑯ (FD)

VOLT/DIV: 100mV
TIME/DIV: 1mS



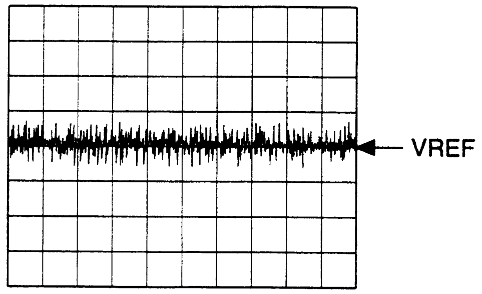
③ IC11 Pin ⑮ (TO)

VOLT/DIV: 100mV
TIME/DIV: 1mS



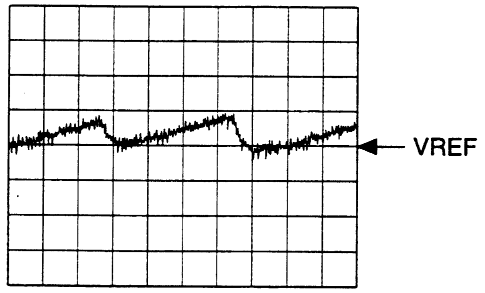
④ IC11 Pin ㉗ (SPD)

VOLT/DIV: 100mV
TIME/DIV: 1mS



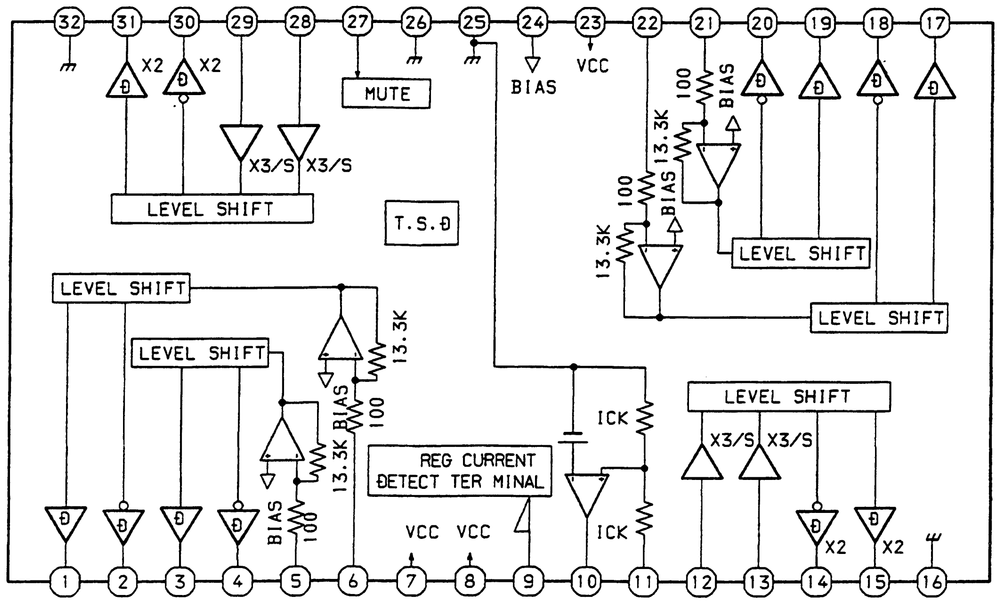
⑤ IC11 Pin ㉙ (SLD)

VOLT/DIV: 200mV
TIME/DIV: 2S



IC BLOCK DIAGRAM

IC, BA5936


32
31
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23
22
21
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19
18
17
X2
X2
MUTE
BIAS
VCC
100
13.3K
BIAS
X3/S
X3/S
LEVEL SHIFT
T.S.D
LEVEL SHIFT
LEVEL SHIFT
LEVEL SHIFT
LEVEL SHIFT
LEVEL SHIFT
13.3K
BIAS
100
ICK
REG CURRENT
DETECT TER MINAL
VCC
VCC
ICK
X3/S
X3/S
X2
X2
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IC DESCRIPTION

IC, LA9241M

端子番号	端子名称	I/O	機能説明
1	FIN2	I	ピックアップのフォトダイオード接続用ピン。FIN1ピンとの加算でRF信号を生成し、減算でFE信号を生成する。
2	FIN1	I	ピックアップのフォトダイオード接続用ピン。
3	E	I	ピックアップのフォトダイオード接続用ピン。Fピンとの減算でTE信号を生成する。
4	F	I	ピックアップのフォトダイオード接続用ピン。
5	TB	I	TE信号のDC成分入力用ピン。
6	TE−	I	TE信号のゲイン設定用抵抗をTEピン間に接続するピン。
7	TE	O	TE信号出力ピン。
8	TESI	I	TES“Track Error Sence”コンパレータ入力ピン。TE信号をバンドパスし、入力する。
9	SCI	I	ショック検出用入力ピン。
10	TH	I	トラッキングゲイン時定数設定用ピン。
11	TA	O	TAアンプ出力ピン。
12	TD−	I	トラッキング位相補償定数をTD、VRピン間で構成するためのピン。
13	TD	I	トラッキング位相補償設定用ピン。
14	JP	I	トラッキングシャンプ信号(キックパルス)振幅設定用ピン。
15	TO	O	トラッキング制御信号出力ピン。
16	FD	O	フォーカシング制御信号出力ピン。
17	FD−	I	フォーカシング位相補償定数をFD、FAピン間で構成するためのピン。
18	FA	I	フォーカシング位相補償定数をFD−、FA−ピン間で構成するためのピン。
19	FA−	I	フォーカシング位相補償定数をFA、FEピン間で構成するためのピン。
20	FE	O	FE信号の出力ピン。
21	FE−	I	FE信号のゲイン設定用抵抗をFEピン間に接続するピン。
22	AGND	—	アナログ信号用GND。
23	NC	—	NO CONNECT
24	SP	O	CV＋、CV−ピン入力信号のシングルエンド出力。
25	SPG	I	スピンドル12cmモード時ゲイン設定用抵抗接続ピン。
26	SP−	I	SPDピンとともにスピンドル位相補償定数接続用ピン。
27	SPD	O	スピンドル制御信号出力ピン。
28	SLEQ	I	スレッド位相補償定数接続用ピン。
29	SLD	O	スレッド制御信号出力ピン。
30、31	SL−、SL＋	I	マイコンからのスレッド送り信号入力ピン。
32、33	JP−、JP＋	I	DSPからのトラッキングジャンプ信号入力ピン。
34	TGL	I	DSPからのトラッキングゲインコントロール信号入力ピン。 TGL=「H」でゲインロー。
35	TOFF	I	DSPからのトラッキングオフコントロール信号入力ピン。 TOFF=「H」でオフ。
36	TES	O	TES信号をDSPへ出力するピン。
37	HFL	O	“High Frequency Level”は、メインビームの位置がピット上か、ミラー上かの判断に利用される。

端子番号	端子名称	I/O	機　能　説　明
38	SLOF	I	スレッドサーボオフコントロール入力ピン。
39、40	CV−、CV＋	I	DSPからのCLVエラー信号入力用ピン。
41	RFSM	O	RF出力ピン。
42	RFS−	I	RFSMピンとともにRFのゲイン設定およびEFM信号の3T補償定数設定用ピン。
43	SLC	O	“Slice Level Control”は、RF波形のDSPによるデータスライスのレベルを制御する出力ピン。
44	SLI	I	DSPによるデータスライスのレベルを制御するための入力ピン。
45	DGND	—	ディジタル系のGNDピン。
46	FSC	O	フォーカスサーチスムージングコンデンサ用出力ピン。
47	TBC	I	“Tracking Balance Control”EFバランス可変範囲用設定ピン。
48	NC	—	NO CONNECT
49	DEF	O	ディスクのディフェクト検出出力ピン。
50	CLK	I	基準クロック入力ピン。DSPの4.23MHzが入力される。
51	CL	I	マイコンコマンドクロック入力ピン。
52	DAT	I	マイコンコマンドデータ入力ピン。
53	CE	I	マイコンコマンドチップイネーブル入力ピン。
54	DRF	O	“Detect RF”RFレベル検出出力。
55	FSS	I	“Focus Serch Select”フォーカスサーチモード(基準電圧に対し±サーチ／＋サーチ)の切り換えピン。
56	VCC2	—	サーボ系、ディジタル系用VCCピン。
57	REFI	—	基準電圧用パスコン接続用ピン。
58	VR	O	基準電圧出力ピン。
59	LF2	I	ディスクのディフェクト検出時定数設定用ピン。
60	PH1	I	RF信号のピークホールド用コンデンサ接続用ピン。
61	BH1	I	RF信号のボトムホールド用コンデンサ接続用ピン。
62	LDD	O	APC回路出力ピン。
63	LDS	I	APC回路入力ピン。
64	VCC1	—	RF系VCCピン。

IC, LC78622E

端子番号	端子名称	I/O	機能説明	
1	DEFI	I	ディフェクト検出信号 (DEF) 入力端子。(未使用時、0Vに接続すること。)	
2	TAI	I	PLL用	テスト用入力端子。プルダウン抵抗内蔵。必ず0Vに接続すること。
3	PDO	O		外部VCO制御用位相比較出力端子。
4	VVSS	—		内蔵VCO用接地端子。必ず0Vに接続すること。
5	ISET	I		PDO出力の電流調整用抵抗接続端子。
6	VVDD	—		内蔵VCO用電源端子。
7	FR	I		VCO周波数レンジ調整用。
8	VSS	—	ディジタル系接地端子。必ず0Vに接続すること。	
9	EFMO	O	スライスレベルコントロール用	EFM信号出力端子。
10	EFMIN	I		EFM信号入力端子。
11	TEST2	I	テスト用入力端子。プルダウン抵抗内蔵。必ず0Vに接続すること。	
12、13	CLV＋、CLK－	O	ディスクモータコントロール用出力。コマンドにより3値出力可能。	
14	V/$\overline{P}$	O	ラフサーボ／位相制御の自動切り換えモニタ出力端子。「H」でラフサーボ、「L」で位相サーボ。	
15	HFL	I	トラック検出信号入力端子。シュミット入力。	
16	TES	I	トラッキング誤差信号入力端子。シュミット入力。	
17	TOFF	O	トラッキングOFF出力端子。	
18	TGL	O	トラッキング・ゲイン切り換え用出力端子。「L」でゲインを上げる。	
19、20	JP＋、JP－	O	トラックジャンプコントロール用出力。コマンドにより3値出力可能。	
21	PCK	O	EFMデータ再生用クロックモニタ端子。位相ロック時、4.3218MHz。	
22	FSEQ	O	同期信号検出出力端子。EFM信号から検出した同期信号と内部生成の同期信号が一致した時に「H」。	
23	VDD	—	ディジタル系電源端子。	
24～28	CONT1～CONT5	I/O	汎用入出力端子1～5	マイコンからのシリアルデータコマンドで制御。使用しない場合、入力端子に設定して0Vに接続するか出力端子に設定してオープンにすること。
29	EMPH	O	ディエンファシス・モニタ出力端子。「H」の時ディエンファシス・ディスク再生中。	
30	C2F	O	C2フラグ出力端子。	
31	DOUT	O	ディジタルOUT出力端子。(EIAJフォーマット)	
32、33	TEST3、TEST4	I	テスト用入力端子。プルダウン抵抗内蔵。必ず0Vに接続すること。	
34	N.C.	—	未使用端子。オープンで使用すること。	
35	MUTEL	O	Lチャネル1ビットDAC	Lチャネル用ミュート出力端子。
36	LVDD	—		Lチャネル用電源端子。
37	LCHO	O		Lチャネル出力端子。
38	LVSS	—		Lチャネル用接地端子。必ず0Vに接続すること。
39	RVSS	—	Rチャネル1ビットDAC	Rチャネル用接地端子。必ず0Vに接続すること。
40	RCHO	O		Rチャネル出力端子。
41	RVDD	—		Rチャネル用電源端子。
42	MUTER	O		Rチャネル用ミュート出力端子。
43	XVDD	—	水晶発振用電源端子。	

端子番号	端子名称	I/O	機 能 説 明
44	XOUT	O	16.9344MHz水晶振動子の接続端子。
45	XIN	I	
46	XVSS	—	水晶発振用接地端子。必ず0Vに接続すること。
47	SBSY	O	サブコードブロックの同期信号出力端子。
48	EFLG	O	C1、C2、1重、2重の訂正モニタ端子。
49	PW	O	サブコードP 、Q、R、S、T、U、Wの出力端子。
50	SFSY	O	サブコードフレーム同期信号出力端子。サブコードがスタンバイした時、立下る。
51	SBCK	I	サブコード読み出しクロック入力端子。シュミット入力。(未使用時0Vに接続すること。)
52	FSX	O	水晶発振から分周した7.35kHz同期信号出力端子。
53	WRQ	O	サブコードQ出力スタンバイ出力端子。
54	RWC	I	リード／ライト制御入力端子。シュミット入力。
55	SQOUT	O	サブコードQ出力端子。
56	COIN	I	マイコンからのコマンド入力端子。
57	$\overline{\mathrm{CQCK}}$	I	コマンド入力取り込みクロックまたはSQOUTからのサブコード取り出しクロック入力端子。シュミット入力。
58	$\overline{\mathrm{RES}}$	I	LC78622リセット入力端子。電源投入時に、一旦「L」にする。
59	TST11	O	テスト用出力端子。オープン (通常「L」出力) で使用すること。
60	16M	O	16.9344MHz出力端子。
61	4.2M	O	4.2336MHz出力端子。
62	TEST5	I	テスト用入力端子。プルダウン抵抗内蔵。必ず0Vに接続すること。
63	$\overline{\mathrm{CS}}$	I	チップセレクト入力端子。プルダウン抵抗内蔵。非制御時、0Vに接続すること。
64	TEST1	I	テスト用入力端子。プルダウン抵抗はない。必ず0Vに接続すること。

注) 各電源端子 (VDD、VVDD、LVDD、RVDD、XVDD) には必ず同電位を供給すること。

IC, LA9241M

Pin No.	Pin Name	I/O	Description
1	FIN2	I	Pin to which external pickup photo diode is connected. RF signal is created by adding with the FIN1 pin signal. FE signal is created by subtracting from the FIN1 pin signal.
2	FIN1	I	Pin to which external pickup photo diode is connected.
3	E	I	Pin to which external pickup photo diode is connected. TE signal is created by subtracting from the F pin signal.
4	F	I	Pin to which external pickup photo diode is connected.
5	TB	I	DC component of the TE signal is input.
6	TE–	I	Pin to which external resistor setting the TE signal gain is connected between the TE pin.
7	TE	O	TE signal output pin.
8	TESI	I	TES "Track Error Sense" comparator input pin. TE signal is passed through a band-pass filter then input.
9	SCI	I	Shock detection signal input pin.
10	TH	I	Tracking gain time constant setting pin.
11	TA	O	TA amplifier output pin.
12	TD–	I	Pin to which external tracking phase compensation constants are connected between the TD and VR pins.
13	TD	I	Tracking phase compensation setting pin.
14	JP	I	Tracking jump signal (kick pulse) amplitude setting pin.
15	TO	O	Tracking control signal output pin.
16	FD	O	Focusing control signal output pin.
17	FD–	I	Pin to which external focusing phase compensation constants are connected between the FD and FA pins.
18	FA	I	Pin to which external focusing phase compensation constants are connected between the FD– and FA– pins.
19	FA–	I	Pin to which external focusing phase compensation constants are connected between the FA and FE pins.
20	FE	O	FE signal output pin.
21	FE–	I	Pin to which external FE signal gain setting resistor is connected between the FE pin.
22	AGND	—	Analog signal GND.
23	NC	—	No connection.
24	SP	O	Single ended output of the CV+ and CV– pin input signal.
25	SPG	I	Pin to which external spindle gain setting resistor in 12 cm mode is connected.
26	SP–	I	Pin to which external spindle phase compensation constants are connected together with SPD pin.
27	SPD	O	Spindle control signal output pin.
28	SLEQ	I	Pin to which external sled phase compensation constants are connected.
29	SLD	O	Sled control signal output pin.
30, 31	SL–, SL+	I	Sled advance signal input pin from microprocessor.
32, 33	JP–, JP+	I	Tracking jump signal input pin from DSP.
34	TGL	I	Tracking gain control signal input from DSP. Low gain when TGL = H.
35	TOFF	I	Tracking off control signal input pin from DSP. Off when TOFF = H.

Pin No.	Pin Name	I/O	Description
36	TES	O	Pin from which TES signal is output to DSP.
37	HFL	O	"High Frequency Level" is used to judge whether the main beam position is on top of bit or on top of mirror.
38	SLOF	I	Sled servo off control input pin.
39, 40	CV–, CV+	I	CLV error signal input pin from DSP.
41	RFSM	O	RF output pin.
42	RFS–	I	RF gain setting and EFM signal 3T compensation constant setting pin together with RFSM pin.
43	SLC	O	"Slice Level Control" is the output pin which controls the RF signal data slice level by DSP.
44	SLI	I	Input pin which control the data slice level by the DSP.
45	DGND	—	Digital system GND.
46	FSC	O	Output pin to which external focus search smoothing capacitor is connected.
47	TBC	I	"Tracking Balance Control" EF balance variable range setting pin.
48	NC	—	No connection.
49	DEF	O	Disc defect detector output pin.
50	CLK	I	Reference clock input pin. 4.23 MHz of the DSP is input.
51	CL	I	Microprocessor command clock input pin.
52	DAT	I	Microprocessor command data input pin.
53	CE	I	Microprocessor command chip enable input pin.
54	DRF	O	"Detect RF" RF level detector output.
55	FSS	I	"Focus Search Select" focus search mode (± search/+ search) select pin.
56	VCC2	—	Servo system and digital system Vcc pin.
57	REFI	—	Pin to which external bypass capacitor for reference voltage is connected.
58	VR	O	Reference voltage output pin.
59	LF2	I	Disc defect detector time constant setting pin.
60	PH1	I	Pin to which external capacitor for RF signal peak holding is connected
61	BH1	I	Pin to which external capacitor for RF signal bottom holding is connected.
62	LDD	O	APC circuit output pin.
63	LDS	I	APC circuit input pin.
64	VCC1	—	RF system Vcc pin.

IC, LC78622E

Pin No.	Pin Name	I/O	Description	
1	DEFI	I	Defect sense signal (DEF) input pin. (Connect to 0V when not used).	
2	TAI	I	For PLL.	Test signal input pin with built-in pull-down resistor. Be sure to connect to 0V.
3	PDO	O		Phase comparator output pin to control external VCO.
4	VVSS	—		GND pin for built-in VCO. Be sure to connect to 0V.
5	ISET	I		Pin to which external resistor adjusting the PD0 output current.
6	VVDD	—		Power supply pin for built-in VCO.
7	FR	I		Pin for VCO frequency range adjustment.
8	VSS	—	Digital system GND. Be sure to connect to 0V.	
9	EFMO	O	For slice level control.	EFM signal output pin.
10	EFMIN	I		EFM signal input pin.
11	TEST2	I	Test signal input pin with built-in pull-down resistor. Be sure to connect to 0V.	
12, 13	CLV+, CLK–	O	Disc motor control output. Three level output is possible using command.	
14	V/$\overline{P}$	O	Rough servo or phase control automatic selection monitoring output pin. Rough servo at H. Phase servo at L.	
15	HFL	I	Track detect signal input pin. Schmidt input.	
16	TES	I	Tracking error signal input pin. Schmidt input.	
17	TOFF	O	Tracking OFF output pin.	
18	TGL	O	Tracking gain selection output pin. Gain boost at L.	
19, 20	JP+, JP–	O	Track jump control signal output pin. Three level output is possible using command.	
21	PCK	O	EFM data playback clock monitoring pin 4.3218 MHz when phase is locked in.	
22	FSEQ	O	Sync signal detection output pin. H when the sync signal which is detected from EFM signal and thesync signal which is internally generated agree.	
23	VDD	—	Digital system power supply pin.	
24~28	CONT1~CONT5	I/O	General purpose input/output pin 1 to 5.	The pin is controlled by the serial data command from microprocessor. When the pin is not used, set the pin to the input terminal and connect to 0V, or alternately set the pin to output terminal and leave the pin open.
29	EMPH	O	De-emphasis monitor output pin. De-emphasis disc is being played back at H.	
30	C2F	O	C2 flag output pin.	
31	DOUT	O	DIGITAL OUT output pin. (EIAJ format).	
32, 33	TEST3, TEST4	I	Test signal input pin with built-in pull-down resistor. Be sure to connect to 0V.	
34	N.C.	—	Not used. Set the pin to open.	
35	MUTEL	O	L-channel 1-bit DAC.	L-channel mute output pin.
36	LVDD	—		L-channel power supply pin.
37	LCHO	O		L-channel output pin.
38	LVSS	—		L-channel GND. Be sure to connect to 0V.
39	RVSS	—	R-channel 1-bit DAC.	R-channel GND. Be sure to connect to 0V.
40	RCHO	O		R-channel output pin.
41	RVDD	—		R-channel power supply pin.
42	MUTER	O		R-channel mute output pin.

Pin No.	Pin Name	I/O	Description
43	XVDD	—	Crystal oscillator power supply pin.
44	XOUT	O	Pin to which external 16.9344 MHz crystal oscillator is connected.
45	XIN	I	
46	XVSS	—	Crystal oscillator GND pin. Be sure to connect to 0V.
47	SBSY	O	Subcode block sync signal output pin.
48	EFLG	O	C1, C2, single and dual correction monitoring pin.
49	PW	O	Subcode P, Q, R, S, T, U and W output pin.
50	SFSY	O	Subcode frame sync signal output pin. Falls down when subcode enters standby.
51	SBCK	I	Subcode read clock input pin. Schmidt input. (Be sure to connected to 0V when not in use.)
52	FSX	O	Pin outputting the 7.35 kHz sync signal which is generated by dividing frequency of crystal oscillator.
53	WRQ	O	Subcode Q output standby output pin.
54	RWC	I	Read/write control input pin. Schmidt input.
55	SQOUT	O	Subcode Q output pin.
56	COIN	I	Command input pin from microprocessor.
57	$\overline{\text{CQCK}}$	I	Command input read clock or subcode read input clock from SQOUT pin
58	$\overline{\text{RES}}$	I	LC78622 reset input pin. Set this pin to L once when the main power is turned on.
59	TST11	O	Test signal output pin. Use this pin as open (normally L output).
60	16M	O	16.9344 MHz output pin.
61	4.2M	O	4.2336 MHz output pin.
62	TEST5	I	Test signal input pin with built-in pull-down resistor. Be sure to connect to 0V.
63	$\overline{\text{CS}}$	I	Chip select signal input pin with built-in pull-down resistor. Be sure to connect to 0V while it is not controlling.
64	TEST1	I	Test signal input pin without built-in pull-down resistor. Be sure to connect to 0V.

Note: The same potential must be applied to the respective power supply terminals. (VDD, VVDD, LVDD, RVDD, XVDD)

TEST MODE

1. CD テストモードの起動方法
   ファンクション CD の釦を押しながら、AC プラグを挿入する。
   上記により FL 表示管が全て点灯し、テストモードが起動します。

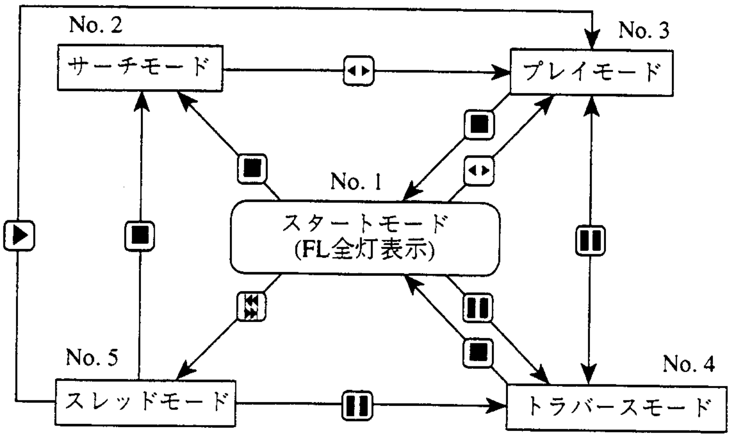
2. CD テストモードの解除方法
   下記のいずれか 1 つの操作で解除します。
   - ファンクション釦を押す (CD ファンクション釦以外)
   - パワー SW 釦を押す。
   - AC プラグを抜く。

3. CD テストモードの機能説明
   テストモード起動後、各操作釦を押す事により次の No1～No5 の各モード機能が使用できます。

Mode/No.	操作	FL 表示	動作	内容
スタートモード No.1	起動	全灯表示	● TEST MODE 起動 ● CD ブロック電源 ON	● FL 表示確認 (全灯)
サーチモード No.2	■ 釦	CD--	● LASER DIODE 常時発光 ● 連続フォーカスサーチ (PU レンズがフルスイングを繰り返す) * 10 分以上の連続フォーカスは避けて下さい。 * 注 1	● APC 回路確認 ● レーザー電流測定 (レーザー電流コントロール、トランジスタのエミッター GND 間の抵抗の両端。) FOCUS SERVO ● フォーカスラッチ波形確認 ● フォーカスエラー波形確認 (サーチモードでは FOK/FZC は監視せず。)
プレイモード No.3	◀▶ 釦	CD 1	● 通常再生 ● TOC READ 出来ない場合 フォーカスサーチを続行 * 注 1	FOCUS SERVO/TRACKING SERVO CLV SERVO/SLED SERVO DRF 確認
トラバースモード No.4	▮▮ 釦	CD 1	● DISC 通常再生中 1 回押す トラッキングサーボ OFF 2 回押す トラッキングサーボ ON * 注 2	TRACKING SERVO ON/OFF トラッキングバランス (トラバース) 確認
スレッドモード No.5	⏮ 釦 ⏭	全灯表示	● ピックアップ外周へ移動 ● ピックアップ内周へ移動 * 注 3 (再生中は通常動作致します)	SLED SERVO SLED メカ動作確認

* 注 1 フォーカスサーチを連続して 10 分以上動作し続けるとドライバー IC が発熱し保護回路が働く為、トラッキングサーボがかからない状態となる場合が有ります。この様な場合には、電源を切り約 10 分間放熱後、再スタートして下さい。
* 注 2 「▮▮」状態で、「⏮」または「⏭」釦を押さない事。「▮▮」状態解除後、再生出来なくなります。「▮▮」状態で、「⏮」または「⏭」釦を押した場合には「■」釦を押しスタートモード (No.1) に戻して下さい。
* 注 3 ピックアップが最内周、最外周の位置でも「⏮」または「⏭」釦を押している間はスレッドモータが回転する為、ギヤ破損に注意して下さい。

4. 操作概要
   下図の様にスタートモードから、矢印方向の流れで各モードの操作が行えます。モード変更は、下図の流れに従い行って下さい。



尚、DISC DIRECT PLAY 釦を押した場合には、上図の PLAY 釦を押した時と同様の動作となります。またプレイモード／トラバースモード時に open/close 釦により、トレイを open させた場合には、スタートモードに戻ります。

1. How to Activate CD Test Mode
Insert the AC plug while pressing the function CD button.
All FL display tubes will light up, and the test mode will be activated.

2. How to Cancel CD Test Mode
Either one of the following operations will cancel the CD test mode.
- Press the function button. (except CD function button)
- Press the power switch button.
- Disconnect the AC plug

3. CD Test Mode Functions
When test mode is activated, the following mode functions from No.1 to No.5 can be used by pressing the operation keys.

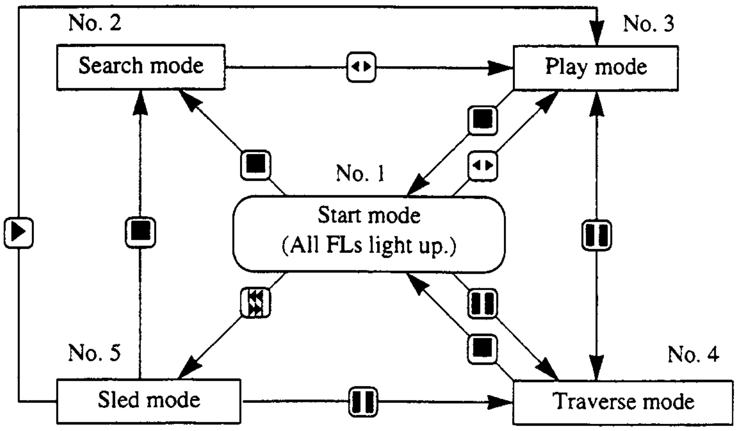
Mode/No.	Operation	FL display	Operation	Contents
Start mode No.1	Activation	All lamps light	• Test mode is activated. • CD block power is ON.	• FL display check (All displays light.)
Search mode No.2	■ key	CD--	• Laser diode turns always ON. • Continual focus search (The pickup lens repeats the full-swing up-down motion.) * Avoid continual searches that last for more than 10 minutes. * NOTE 1	• APC circuit check • Laser current measurement (Laser current control. Across a resistor connected between emitter and GND.) FOCUS SERVO • Check focus search waveform • Check focus error waveform (FOK/FZC are not monitored in the search mode)
Play mode No.3	◀▶ key	CD11	• Normal playback • Focus search is continued if TOC cannot be read. * NOTE 1	FOCUS SERVO/TRACKING SERVO CLV SERVO/SLED SERVO Check DRF
Traverse mode No.4	❚❚ key	CD11	• During normal disc playback Press once; tracking servo OFF Press twice; tracking servo ON * NOTE 2	TRACKING SERVO ON/OFF Tracking balance (traverse) check
Sled mode No.5	⏮ key ⏭	All lamps light	• Pickup moves to the outermost track • Pickup moves to the innermost track * NOTE 3 (During playback, machine operates normally.)	SLED SERVO Check SLED mechanism operation

* NOTE 1: There are cases when the tracking servo cannot be locked owing to the protection circuit being operated when heat builds up in the driver IC if the focus search is operated continually for more than 10 minutes. In these cases the power supply should be switched off for 10 minutes until heat has been reduced and then re-started.

* NOTE 2: Do not press the ⏮ or ⏭ keys when the machine is in the ❚❚ status is active. If they are pressed, playback will not be possible after the ❚❚ status has been canceled. If the ⏮ or ⏭ keys are pressed in the ❚❚ status, press the ■ key and return to the start mode (No.1).

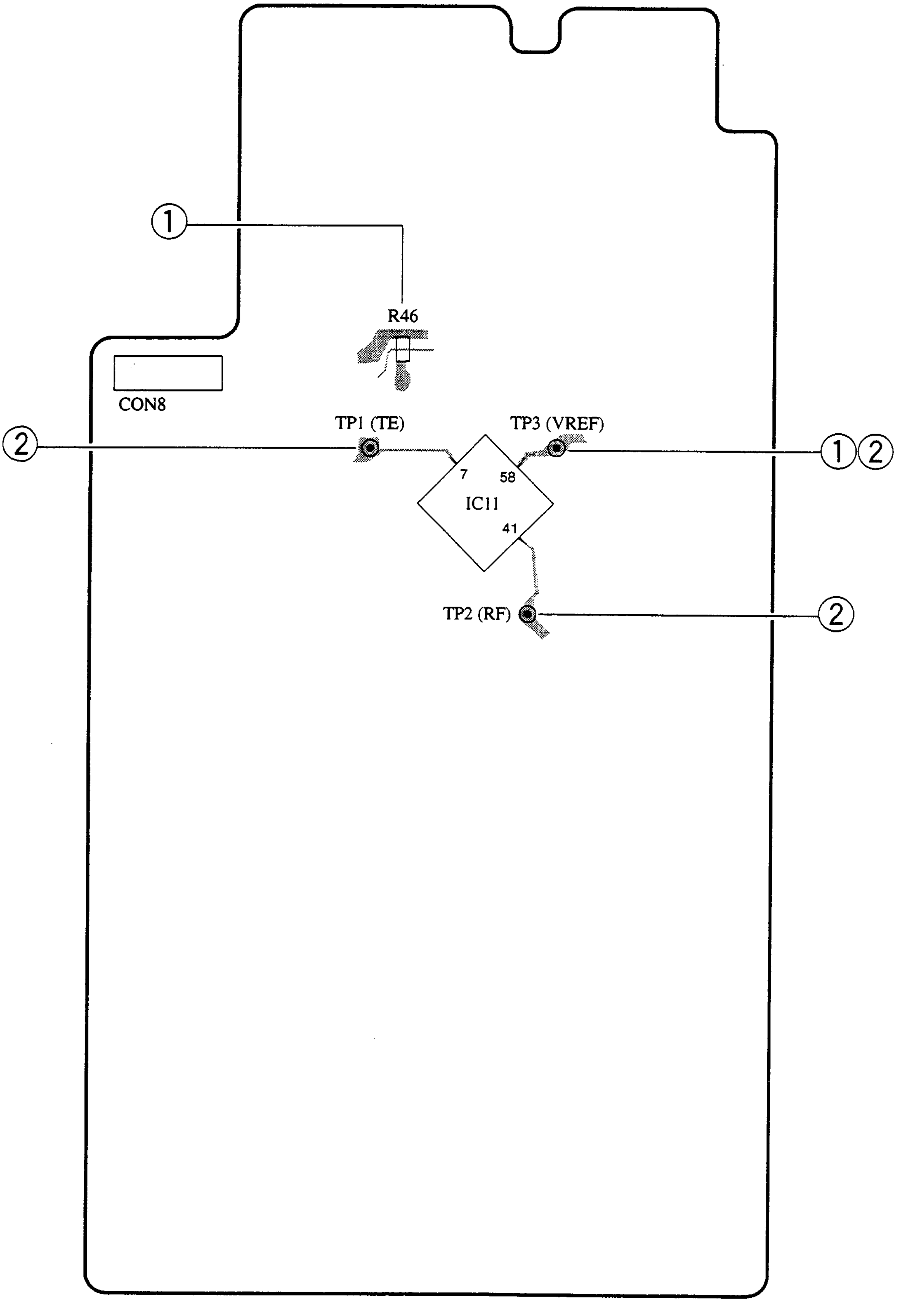
* NOTE 3: When pressing the ⏮ or ⏭ keys, take care to avoid damage to the gears. Because the sled motor is activated when the ⏮ or ⏭ keys are pressed, even when the pick-up is at the outermost or innermost track.

4. Operation Outline
The operation of each mode is carried out in the direction of the arrows from the start mode as indicated in the following illustration.



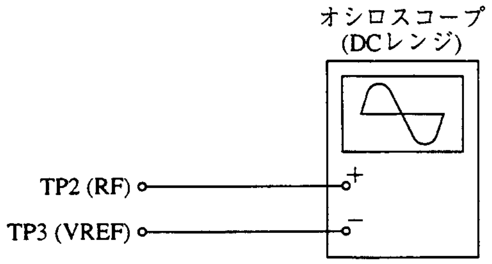
If the DISC DIRECT PLAY button is pressed, the machine performs the same operation as the PLAY button is pressed is shown. If the tray is opened by pressing OPEN/CLOSE button during Play mode or Traverse mode, the machine returns to the Start mode.

A 3CD C.B (PATTERN SIDE)

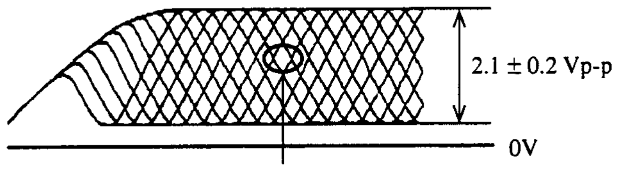

①
R46
CON8
②
TP1 (TE)
TP3 (VREF)
①②
7
58
IC11
41
TP2 (RF)
②

注意：
- (10：1) のプローブを接続して、調整して下さい。
- 各調整には、オシロスコープの⊖側をTP3 (VREF) に接続して下さい。

1. RF波形の確認


オシロスコープ
(DCレンジ)
TP2 (RF)
TP3 (VREF)
+
−

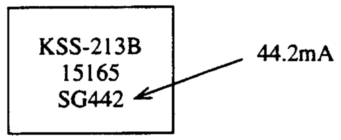
1) テストポイントTP2 (RF)、TP3 (VREF) にオシロスコープを接続する。
2) POWERスイッチをONにする。
3) テストディスクTCD-782 (YEDS-18) を入れて2曲目をPLAYさせる。
4) オシロスコープの波形の振幅が2.1 Vp-pとなり、かつ中央のひし形が、鮮明である事を確認する。



EYE PATTERN
must be CLEAR and MAX.

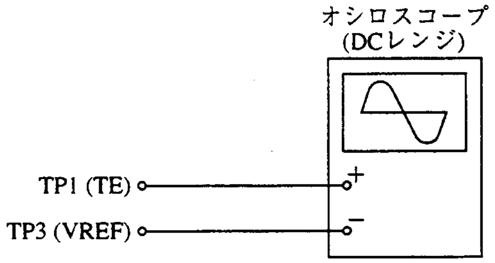
VOLT/DIV : 50mV
TIME/DIV : 0.5 μS

注意： レーザー電流の確認はR46 (10Ωの両端電圧) で行えます。レーザーピックアップの裏側のラベルの電流値に対して±6.0mAに入っていること。

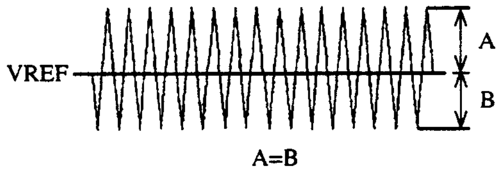

KSS-213B
15165
SG442
44.2mA

$$\text{レーザー電流Iop} = \frac{\text{R46の両端電圧}}{10\Omega}$$

2. トラッキング・バランス確認


オシロスコープ
(DCレンジ)
TP1 (TE)
TP3 (VREF)
+
−

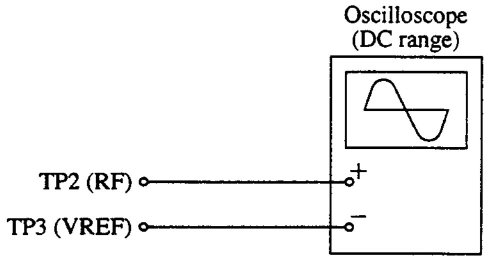
1) テストポイントTP1 (TE)、TP3 (VREF) にオシロスコープを接続する。
2) CDテストモードを起動する。
3) テストディスクTCD-782 (YEDS-18) を入れて、CDテストモードのトラバースモードにする。
4) オシロスコープのトラバース波形が、下図のように上下対称である事を確認する。
5) 確認後、CDテストモードを解除する。



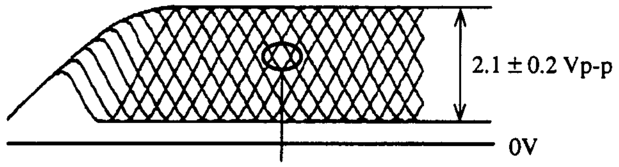
VOLT/DIV : 20mV
TIME/DIV : 1mS

Note:
- Connect a probe (10: 1) of the oscilloscope or the frequency counter to a test point.
- During adjustment, connect (⊖) pin of an oscilloscope to TP3 (VREF).

1. RF waveform Check


Oscilloscope
(DC range)
TP2 (RF)
TP3 (VREF)
+
−

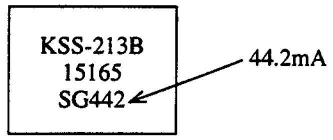
1) Connect an oscilloscope to test points TP2 (RF) and TP3 (VREF).
2) Turn on the power switch.
3) Insert test disc TCD-782 (YEDS-18) and play back the second program.
4) Confirm that the waveform at oscilloscope has amplitude of 2.1 Vp-p, and clear wedge area in its center.



EYE PATTERN
must be CLEAR and MAX.

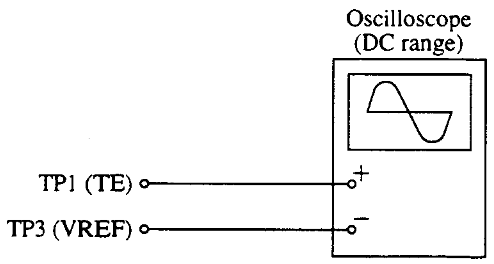
VOLT/DIV: 50mV
TIME/DIV: 0.5μS

Note: The current of the laser signal can be checked with the voltages on both sides of R46 (voltage across 10Ω). The difference for the specified value shown on the label must be within ± 6.0mA.

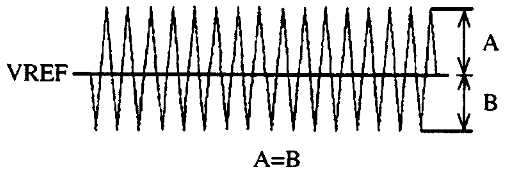

KSS-213B
15165
SG442
44.2mA

$$\text{Laser current Iop} = \frac{\text{Voltage across R46}}{10\Omega}$$

2. Tracking Balance Check

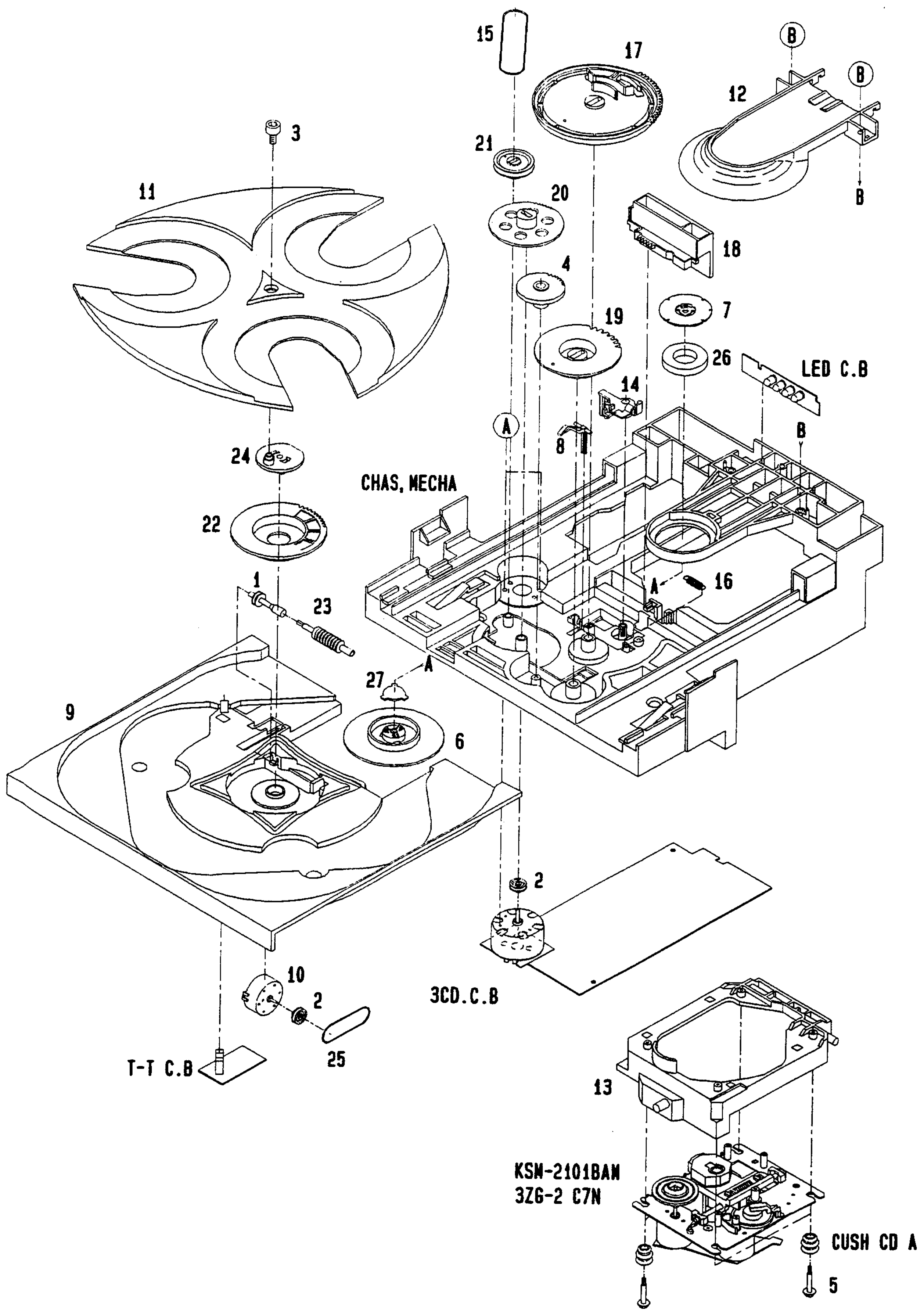

Oscilloscope
(DC range)
TP1 (TE)
TP3 (VREF)
+
−

1) Connect an oscilloscope to test points TP1 (TE) and TP3 (VREF).
2) Start up the CD test mode.
3) Insert the test disc TCD-782(YEDS-18) and enter the traverse mode of the CD test mode.
4) Confirm that the traverse waveform on an oscilloscope is vertically symmetrical as shown in the figure below.
5) After confirming the waveform, release the CD test mode.



VOLT/DIV: 20mV
TIME/DIV: 1mS

MECHANICAL EXPLODED VIEW 1／1

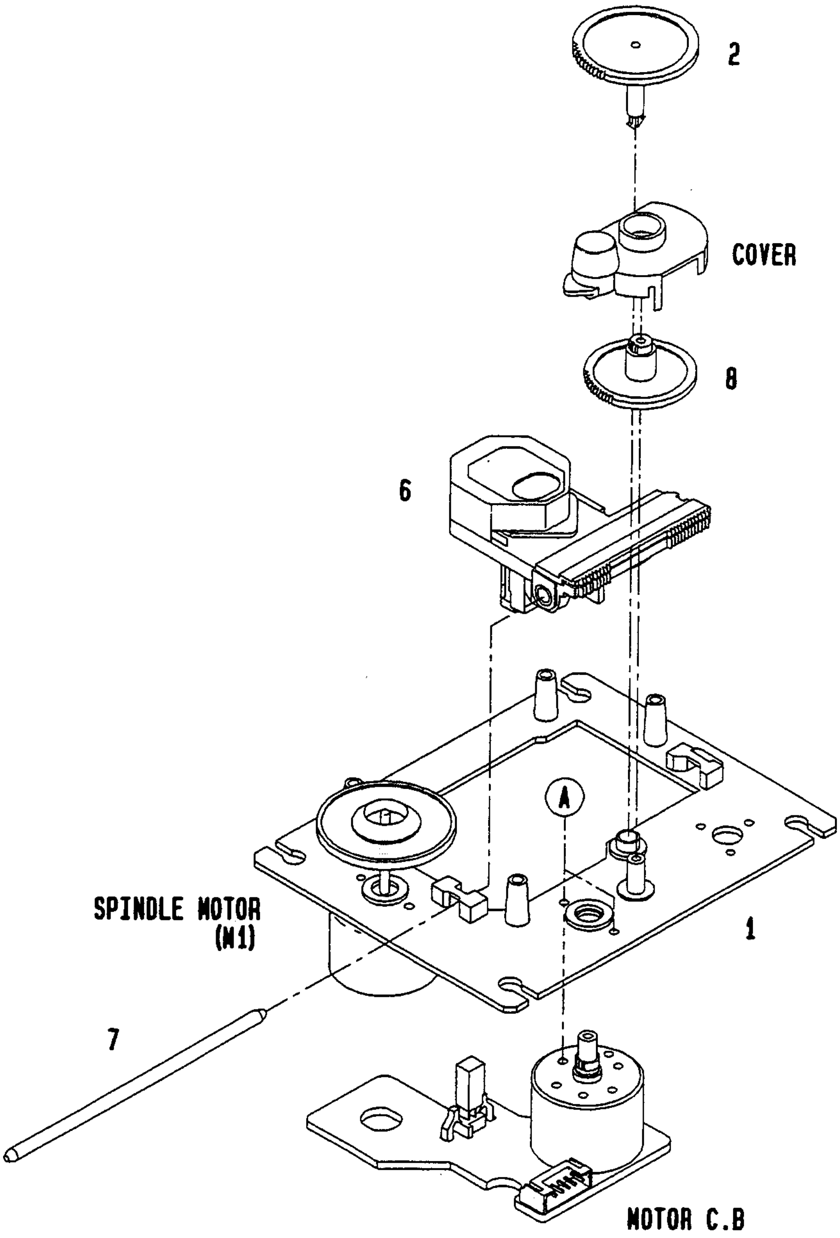


MECHANICAL PARTS LIST 1／1

DESCRIPTIONで判断できない物は "REFERENCE NAME LIST" を参照してください。
If can't understand for Description please kindly refer to "REFERENCE NAME LIST".

REF. NO	PART NO.	カンリ NO.	DESCRIPTION
1	84-ZG1-239-110	1A	PULLY,WORM N
2	81-ZG1-212-010	0E	PULLY,LOAD MO
3	81-ZG1-239-010	0E	S-SCREW,TT
4	81-ZG1-291-010	0E	GEAR,TRAY RELAY NO3
5	81-ZG1-271-010	0E	S-SCREW,MECH REAR
6	81-ZG1-277-210	1A	HLDR,MAGNET N
7	81-ZG1-229-110	0E	PLATE,MAGNET<1MD,1D>
7	81-ZG1-255-110	0E	PLATE,MAGNET MK2<1DM,2DM>
8	83-ZG3-213-010	0E	LVR,SW
9	84-ZG1-003-210	1M	TRAY,NO2-B
10	87-045-364-010	1D	MOTOR,(BCH3B14)
11	84-ZG1-005-110	1C	TURNTABLE,NO1
12	84-ZG1-011-010	1A	REFLECTOR,CD
13	84-ZG1-212-110	1A	HLDR,MECHA NO2
14	84-ZG1-208-010	0E	LEVER,CAM
15	84-ZG1-209-010	0E	BELT,SQ1.8-117.7
16	84-ZG1-211-010	0E	SPR-E CAM S
17	84-ZG1-215-210	1B	GEAR,MAIN CAM BLU
18	84-ZG1-216-210	1A	SLIDE,MECHA CAM YEL
19	84-ZG1-205-110	1A	GEAR,TRAY
20	84-ZG1-206-110	0E	GEAR,RELAY
21	84-ZG1-207-010	0E	PULLY,RELAY
22	84-ZG1-221-010	1A	GEAR,MAIN TT
23	84-ZG1-238-010	1A	GEAR,WORM N
24	84-ZG1-224-010	0E	LEVER,TT
25	84-ZG1-225-010	0E	BELT,SQ1.0-63.3
26	87-036-326-010	0E	MAGNET,CLAMPER 93<1MD,1D,1DM>
26	83-ZG3-602-010	0E	RING,MAG<2DM>
27	84-ZG1-248-010	0E	SPR-C,WORM
A	87-251-070-410	0E	U+2.6-3
B	87-067-703-010	0E	BVT 2+3-10 W/O SLOT

CD MECHANISM EXPLODED VIEW 1／1 (KSM-2131BAM <1D, 1MD>)

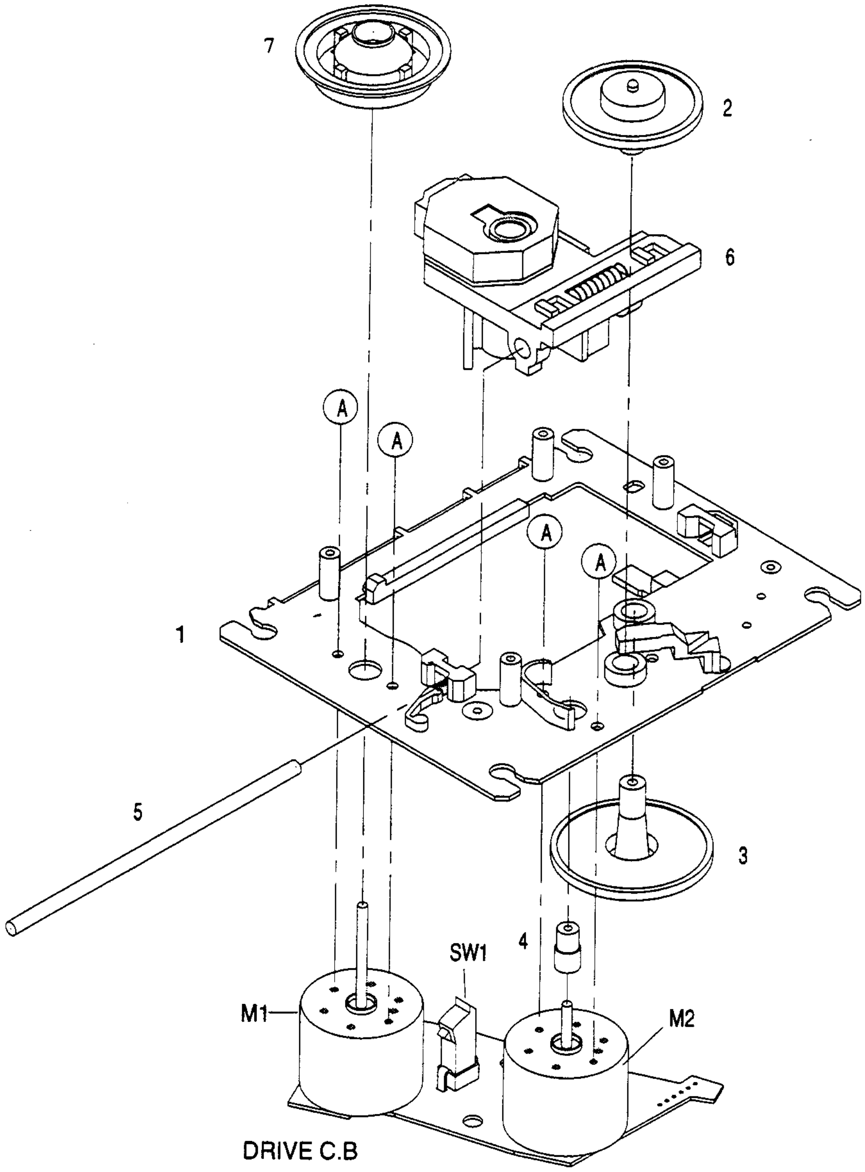


CD MECHANISM PARTS LIST 1／1 (KSM-2131BAM <1D, 1MD>)

DESCRIPTIONで判断できない物は “REFERENCE NAME LIST” を参照してください。
If can't understand for Description please kindly refer to “REFERENCE NAME LIST”.

REF. NO	PART NO.	ｶﾝﾘ NO.	DESCRIPTION	REF. NO	PART NO.	ｶﾝﾘ NO.	DESCRIPTION
1	9X-262-587-110	--	MOTOR CHASSIS ASSY	A	97-621-255-150	0E	SCREW+P2-3
2	92-626-907-010	--	GEAR(A)				
6	98-848-379-310	--	OPTICAL PICK UP KSS-213B				
7	92-626-908-010	2A	SHAFT SLED				
8	92-627-003-010	--	GEAR B				

CD MECHANISM EXPLODED VIEW 1／1 (3ZG-2 C7N <2D>)



CD MECHANISM PARTS LIST 1／1 (3ZG-2 C7N <2D>)

DESCRIPTIONで判断できない物は “REFERENCE NAME LIST” を参照してください。
If can’t understand for Description please kindly refer to “REFERENCE NAME LIST”.

REF. NO	PART NO.	カンリ NO.	DESCRIPTION
1	83-ZG2-202-71K	1C	O-SERT S ASSY,S
2	83-ZG2-204-419	0E	GEAR,A
3	83-ZG2-205-219	0E	GEAR,B
4	83-ZG2-220-01K	0E	GEAR,MOTOR 2
5	83-ZG2-207-119	1A	SHAFT,SLIDE
6	87-070-445-010	2C	PICK-UP,KSS-213B
7	83-ZG2-233-019	1B	TURN TABLE,A5
A	87-261-032-219	0E	SCREW V+2-3

USE MODEL LIST

CX-NA92 (NSX-A92)
CX-NMT90 (NSX-MT90)
CX-NAV95 (NSX-AV95)
CX-NA71 (NSX-A71)
CX-NMT70 (NSX-MT70)
CX-NAV85 (NSX-AV85)
CX-NA50 (NSX-A50)
CX-NS50 (XG-S50)
CX-NA51 (NSX-A51)
CX-NS52 (NSX-S52)
CX-NMT50 (NSX-MT50)
CX-NAV75 (NSX-AV75)
CX-NK550 (NSX-K550)
CX-NH50 (XR-H5MD)
CX-NA30 (NSX-A30)
CX-NS30 (XG-S30/NSX-S30)
CX-NA31 (NSX-A31)
CX-NA34 (NSX-A34)
CX-NS33
CX-NS32
CX-NS35
CX-NA35
CX-NS36
CX-NAV65 (NSX-AV65)
CX-NAV66 (NSX-AV66)
CX-NH3MD (XR-H3MD)

REFERENCE NAME LIST

ELECTRICAL SECTION

DESCRIPTION	REFERENCE NAME
ANT	ANTENNAS
C-	CHIP
C-CAP	CAP, CHIP
C-CAP TN	CAP, CHIP TANTALUM
C-COIL	COIL, CHIP
C-DI	DIODE, CHIP
C-DIODE	DIODE, CHIP
C-FET	FET, CHIP
C-FOTR	FILTER, CHIP
C-JACK	JACK, CHIP
C-LED	LED, CHIP
C-RES	RES, CHIP
C-SFR	SFR, CHIP
C-SLIDE SW	SLIDE SWITCH, CHIP
C-SW	SWITCH, CHIP
C-TR	TRANSISTOR, CHIP
C-VR	VOLUME, CHIP
C-ZENER	ZENER, CHIP
CAP, CER	CAP, CERA-SOL
CAP, E	CAP, ELECT
CAP, M/F	CAP, FILM
CAP, TC	CAP, CERA-SOL
CAP, TC-U	CAP, CERA-SOL SS
CAP, TN	CAP, TANTALUM
CERA FIL	FILTER, CERAMIC
CF	FILTER, CERAMIC
DL	DELAY LINE
E/CAP	CAP, ELECT
FILT	FILTER
FLTR	FILTER
FUSE RES	RES, FUSE
MOT	MOTOR
P-DIODE	PHOTO DIODE
P-SNSR	PHOTO SENSER
P-TR	PHOTO TRANSISTOR
POLY VARI	VARIABLE CAPACITOR
PPCAP	CAP, PP
PT	POWER TRANSFORMER
PTR, RES	PTR, MELF
RC	REMOTE CONTROLLER
RES NF	RES, NON-FLAMMABLE
RESO	RESONATOR
SHLD	SHIELD
SOL	SOLENOID
SPKR	SPEAKER
SW, LVR	SWITCH, LEVER
SW, RTRY	SWITCH, ROTARY
SW, SL	SWITCH, SLIDE
TC CAP	CAP, CERA-SOL
THMS	THERMISTOR
TR	TRANSISTOR
TRIMMER	CAP, TRIMMER
TUN-CAP	VARIABLE CAPACITOR
VIB, CER	RESONATOR, CERAMIC
VIB, XTAL	RESONATOR, CRYSTAL
VR	VOLUME
ZENER	DIODE, ZENER
サージサプレッサ	SERGESUPPRESSOR
セラコン	CAP,CERA

MECHANICAL SECTION

DESCRIPTION	REFERENCE NAME
ADHESHIVE	SHEET ADHESHIVE
AZ	AZIMUTH
BAR-ANT	BAR-ANTENNA
BAT	BATTERY
BATT	BATTERY
BRG	BEARING
BTN	BUTTON
CAB	CABINET
CASS	CASSETTE
CHAS	CHASSIS
CLR	COLLAR
CONT	CONTROL
CRSR	CURSOR
CU	CUSHION
CUSH	CUSHION
DIR	DIRECTION
DUBB	DUBBING
FL	FRONT LOADING
FLY-WHL	FLYWHEEL
FR	FRONT
FUN	FUNCTION
G-CU	G-CUSHION
HDL	HANDOL
HIMERON	CLOTH
HINGE, BAT	HINGE, BATTERY
HLDR	HOLDER
HT-SINK	HEAT SINK
IB	INSTRUCTION BOOKLET
IDLE	IDLER
IND, L-R	INDICATOR, L-R
KEY, CONT	KEY, CONTROL
KEY, PRGM	KEY, PROGRAM
KNOB, SL	KNOB, SLIDE
LBL	LABEL
LID, BATT	LID, BATTERY
LID, CASS	LID, CASSETTE
LVR	LEVER
P-SP	P-SPRING
PANEL, CONT	PANEL, CONTROL
PANEL, FR	PANEL, FRONT
PRGM	PROGRAM
PULLY, LOAD MO	PULLY, LOAD MOTOR
RBN	RIBBON
S-	SPECIAL
SEG	SEGMENT
SH	SHEET
SHLD-SH	SHIELD-SHEET
SL	SLIDE
SP	SPRING
SP-SCREW	SPECIAL-SCREW
SPACER, BAT	SPACER, BATTERY
SPR	SPRING
SPR-P	P-SPRING
SPR-PC-PUSH	P-SPRING, C-PUSH
T-SP	T-SPRING
TERM	TERMINAL
TRIG	TRIGGER
TUN	TUNING
VOL	VOLUME
W	WASHER
WHL	WHEEL
WORM-WHL	WORM-WHEEL
ジグアーム	ARM,SHAFT
ジグガイド	GUIDE,SHAFT
ストラップ	STRAP
トクナベ	S-SCREW
ヒンジ	HINGE
ヒンジビス	S-SCREW
ビスセレート	SCREW,SERRART

サービス技術ニュース	
番号	連絡内容
G－　－	
G－　－	
G－　－	

912162

アイワ株式会社
AIWA CO.,LTD.

Tokyo Japan

〒110 東京都台東区池之端1－2－11　☎ 03 (3827) 3111 （代表）

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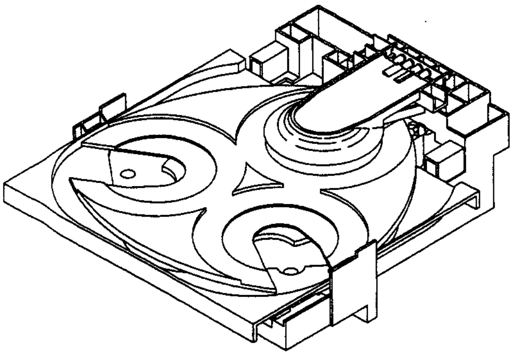
SERVICE

4ZG-1Z



CD MECHANISM

- BASIC CD MECHANISM: KSM-2131 BAM / 3ZG-2 C7
- TYPE: English,Japanese

SERVICE MANUAL

CORRECTION

BASIC NAME	DERIVATION NAME					
4ZG-1Z	1D	2D	1MD	–	–	–

- ■ This Service Manual is replaces “CORRECT Manual”(S/M Code No.09-973-187-50T).
- ■ 本体マニュアルは(S/M Code No.09-973-187-50T)の訂正版です。

S/M Code No. 09-984-270-60T

■ "このサービスマニュアルにはCDメカニズムの説明は含まれていません。CDメカニズムについては4ZG-1 (S/M Code No..........) のマニュアルを参照して下さい。" の別冊マニュアルの使用文のS/M Code Noに誤りがあります。

(正) 09-973-187-50T ← (誤) 09-974-187-50T

下記の機種の別冊メカニズムは09-973-187-50Tを使用又は取得をして下さい。

■ "The CD mechanism description is not included in this Service Manual. Refer to 4ZG-1 (S/M Code No. ....) for description of CD mechanism." Please correct the S/M Code No. as shown below as there was mistake in the description of separate manual.

(Correct) 09-973-187-50T ← (Error) 09-974-187-50T

Please obtain and use the separate manual using the Code No. 09-973-187-50T.

1. 09-978-216-8FE (NSX-S50)
2. 09-978-220-4FE (NSX-AV75)
3. 09-978-195-5FP (NSX-AV96)
4. 09-978-220-3FE (NSX-AV75)
5. 09-973-182-5FP (NSX-A71/S70/S74)

6. 09-975-193-5FP (NSX-S70/S74)
7. 09-974-181-9FP (NSX-A92/A94/S90/S94)
8. 09-974-160-3FE (NSX-A30/A31/S33)
9. 09-976-181-6FE (NSX-AV65/AV66)
10. 09-976-186-6FP (NSX-MT70/MT75/AV85)

11. 09-976-207-0FP (NSX-A72/A74)
12. 09-977-190-4FP (NSX-S90)
13. 09-976-181-5FE (NSX-S30/S32/S33/S35/S36)
14. 09-977-202-7FE (NSX-S22/A22)
15. 09-976-188-4FE (NSX-AV75/NMT50/NMT55)

16. 09-977-181-7FP (NSX-AV95)
17. 09-978-206-6FP (NSX-AV85)
18. 09-978-215-8FE (NSX-S22/S23/XG-S22)
19. 09-978-220-2FE (NSX-S52)
20. 09-977-212-8FE (XG-550/NSX-S52)

21. 09-978-181-4FE (NSX-S32/S33/S36/S37)
22. 09-978-213-4FP (NSX-S74)
23. 09-979-222-5FE (NSX-S22)
24. 09-979-214-1FP (NSX-S94/S95)
25. 09-979-219-1FP (NSX-S90)

26. 09-979-225-2FE (NSX-A66)
27. 09-97A-222-7FE (NSX-S38)

お詫び

09-983-257-90Tで発行したCORRECTIONの表現方法は誤解を生じる為、廃棄して下さい。

Notice

Please discard the CORRECTION issued under 09-983-257-90T in order to avoid the expression which can cause misleading.

サービス技術ニュース	
番号	連絡内容
G— —	
G— —	
G— —	

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